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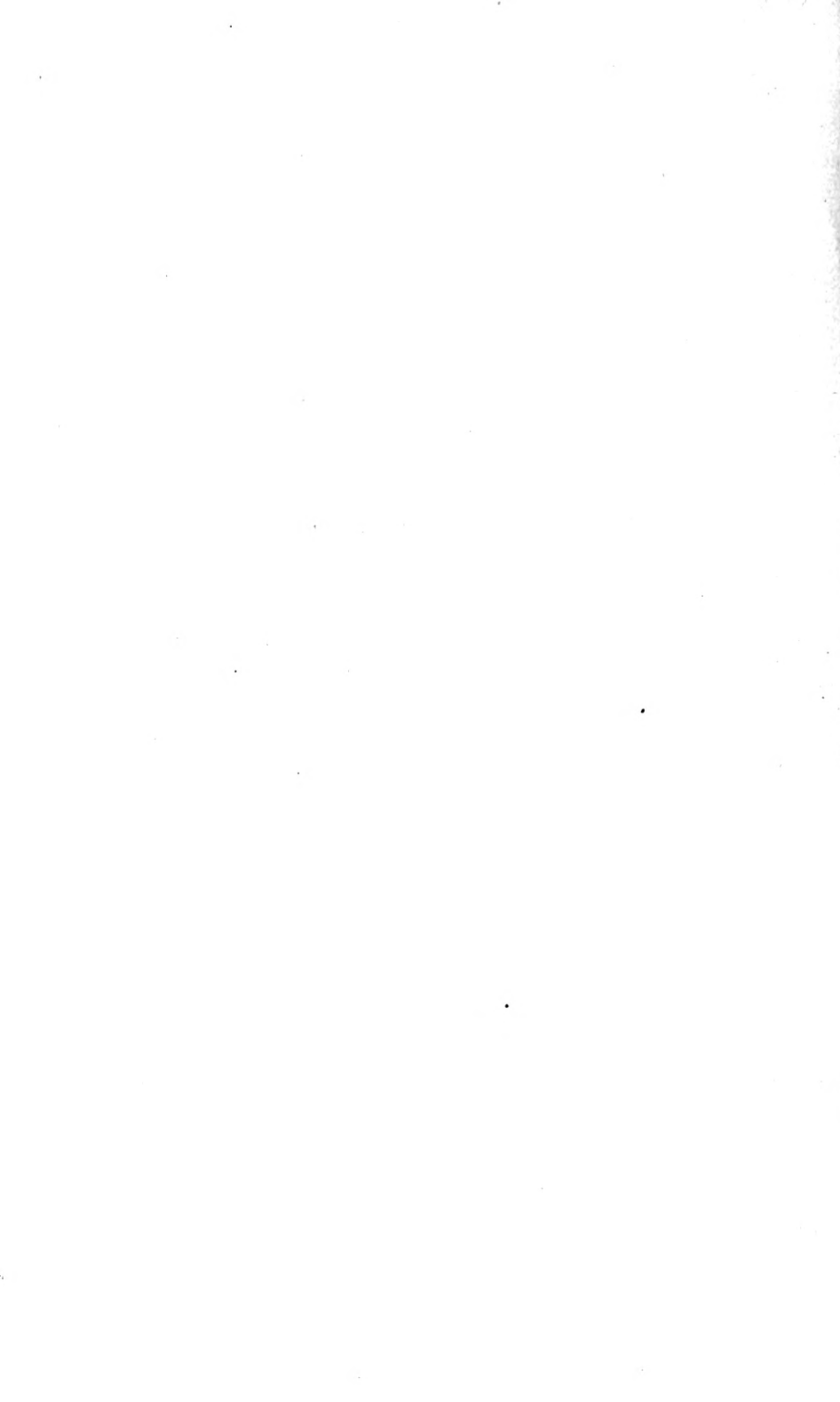
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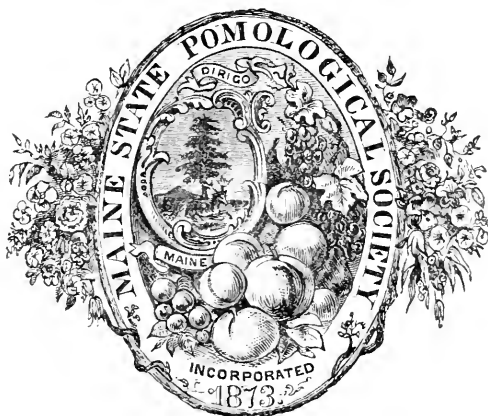






TRANSACTIONS
OF THE
Maine State Pomological Society,
FOR THE YEAR 1891.

Including the Proceedings of the Union Winter Meeting held in
Smith & Warren's Hall, Cornish, February 17th and 18th, 1892.



EDITED BY THE SECRETARY,
D. H. KNOWLTON.

AUGUSTA, MAINE:
BURLEIGH & FLYNT, STATE PRINTERS.
1892.

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1891
CHANCE

Come, let us plant the apple-tree!
Cleave the tough greensward with the spade;
Wide let its hollow bed be made;
Then gently lay the roots, and then
Sift the dark mould with tender care,
And press it o'er them tenderly,
As round the sleeping infant's feet
We softly fold the cradle sheet.
So plant we the apple-tree.

—Bryant.

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MAINE STATE POMOLOGICAL SOCIETY.

Transactions for the Year 1891-92.

INTRODUCTORY.

The present volume will give to the general public some idea of the work of this Society, though its true measure of usefulness can hardly be measured by the printed page or the spoken word. In the affairs of the Society the officers have aimed at the great needs of the State, and while the means would not permit of doing all these needs called for, the work has been efficient and in many cases the results apparent.

So varied are the conditions in different parts of the State, that it is exceedingly difficult to make full recognition of them, but there has been an effort to give prominence to common truths in fruit culture. A careful study of all the conditions essential to fruit culture has convinced the officers of the Society that fruit culture in the State may be made a leading industry with profit to the grower. It is to be regretted that so few grasp the possibilities of fruit culture in the State. It may be due to the great conservatism of those engaged in rural pursuits, that better culture and improved methods are not more generally employed. By the use of these there are thousands of acres in Maine, that now barely pay more than the taxes that could be converted into a profitable fruit growing industry. Fruit culture as the leading business of the farmer is not a popular idea in Maine, and sometimes as one beholds the neglected orchards it is astonishing to note that, in many cases, even these for the labors expended prove to be the most profitable parts of the farm. To us the fact is suggestive of the grand results possible to those who devote themselves to fruit growing as a leading industry. With this in view it has been the aim of the Society to give special prominence

to fruit growing as a business, which will yield sure returns for labor and capital.

The financial affairs of the Society are in good condition. It has been the effort of the officers to make a strict application of the life membership fees to the benefit of the permanent fund. So far as the Society has a debt it is represented by the deficiency in this fund. The founders of the Society intended to make this fund a source of revenue to the Society, and it is believed that the same fostering care in future will bring the fund up to the amount required under our by laws. There has been an effort to administer all the affairs of the Society with economy, and with this in view the expenditures have been kept within its income.

The executive committee have been called together only when absolutely necessary, and at the meetings of the committee the business of the Society has been given careful attention.

The institute work conducted under the Secretary of the Board of Agriculture has shown the wisdom of the Legislature in granting a larger appropriation for this purpose. Speakers representing our Society and the interests of fruit culture have been fully recognized in the programmes, and so far as the secretary is able to report they have faithfully served the interests intrusted to them. As this institute fund is to be used in the interest of agriculture it seems entirely proper that fruit growing should be given a place in the work commensurate with its importance.

A large number of fruit trees were set in 1891, but they were mostly in small lots upon farms where fruit growing is one of the sources from which the farmer has products to sell. There is also abundant evidence of wide-spread interest in fruit culture from all parts of the State, but there are very few who make it the leading industry of the farm. These fruit growers, by the way, are among the most successful farmers, and as they find that orcharding pays better than general farming are enlarging their business and aiming at the production of more and better fruit. This, we believe, is true that those who have produced the best fruit, and the most intelligently overcome the difficulties, have received the most profit from their labors. As the area of fruit production in the country increases year by year we must not expect very high prices, for not alone do we compete with apples grown from Maine to California, but there are oranges, bananas, grapes and other fruits that are selling so cheaply it is not strange that people buy them for dessert in place

of the inferior apples displayed beside them. So that it may be better to protect the trees we now have, give them high culture, destroy the insects and fungi that injure the fruit, grow better fruit and sell it for higher prices.

The apple crop was hardly an average in quantity in 1891, but the quality was inferior in consequence of the coddling worm and other pests. Less than fifty per cent of the fruit was No. 1. So large was the crop in other parts of the country that a foreign market was sought. It is a source of regret that packers have been careless and in many instances the price has been low. Maine shippers generally, we think, have made money the past season though on the last shipments made in February and March, 1892, there were considerable losses. But the unfortunate thing about the whole matter is to be found in the fact that our Canadian neighbors, just over the line, have won a better reputation for apples than Maine. Our investigations lead us to conclude that the cause is chiefly in the inferior quality of the apples shipped from the State. By this we mean that it is unwise and in the end unprofitable to send to a distant market anything but the best fruits carefully packed. One of the largest buyers in Maine said to the writer, "There are only two farmers in this part of the State who know how to pack their fruit. If all would pack as well as they, Maine fruit would lead in the markets of Europe."

At the first meeting of the World's Fair Managers held in Augusta in May, 1891, three members of the executive committee were present, and by courtesy of the Board presented for their consideration the interests of Maine fruit growers in connection with the Fair. They urged the Board to make an appropriation of \$2,000 for the purpose, and that the exhibition of Maine fruits should be entrusted to the Maine State Pomological Society. Again at a later meeting the executive committee was represented by President Pope, and by correspondence the committee have been in communication with the managers. The executive officers have urged at all times early action, and they believe that the organized fruit industries of the State are entitled to all they ask in their behalf. The officers of the Society have not deemed it advisable to appear at other meetings of the managers, as the funds are necessarily applied to other purposes. The latest information at this writing (April 1, 1892) is that the committee on fruits have unanimously recommended that \$2,000 be set apart for the fruit exhibition and here the matter rests.

Should other action be necessary on the part of the Society, the executive committee will endeavor to secure what justly and honestly belongs to the fruit growing industry of the State.

Under date of December 16, 1891, the following letter was received from the World's Columbian Commission :

Mr. D. H. KNOWLTON, Farmington, Me. :

Dear Sir : As the available space for exhibits in the horticultural building, and the grounds assigned to the department of horticulture, is being rapidly taken, by intending exhibitors in this and foreign countries, let me urge upon you the necessity of immediately applying for the space needed for your State.

States that are tardy in making application will have only themselves to blame if they do not secure all the space to which the Board or the State Horticultural Society thinks they are entitled.

I would respectfully direct your attention to the following rule adopted by the Board of Reference and Control, and the Board of Directors of the World's Columbian Exposition, for the establishment and maintenance of separate state exhibits :

"All exhibits intended to be competitive and within the jurisdiction of juries or committees authorized to award prizes, must be located in some one of the general Exposition buildings, and be grouped according to the official classification, except such exhibits as can only be properly and advantageously displayed in the grounds ; provided, however, that this exception shall only operate in those cases where, in the judgment of the director-general, he shall deem it expedient to grant the express permission."

Inclosed please find application blanks. Note well each rule. It is my earnest desire that your state make a grand horticultural display.

Very respectfully,

J. M. SAMUELS.

Chief, Dep't of Horticulture.

In response to this communication we could only say that our Society hoped the fruit interests of the State would be provided for under the Maine Board of Managers. That we had reason to expect that a good exhibition would be made under their direction.

Mr. Van Deman, Pomologist of the Agricultural Department, since his visit to Maine in 1890, has been earnest in his efforts to have Maine make a good exhibit of fruit at the World's Fair. As indicative of this interest we publish the letter following :

U. S. DEPARTMENT OF AGRICULTURE, }
DIVISION OF POMOLOGY, }
WASHINGTON, D. C., Feb. 23, 1892. }

MR. D. H. KNOWLTON, Secretary of State Pomological Society,
Farmington, Maine.

Dear Sir : Many of the states are already active in their movements as to preparing for the great fruit show at the Columbian

Exposition and I trust that Maine is doing the same. Not having any definite information as to this, I write to find out the real status of the case. I remember having had two conversations with Governor Burleigh in regard to this matter more than a year ago and he seemed very anxious that the fruit exhibit should be in the hands of your Society and that it should be well supported financially. He asked me how much money it would take and I told him then that two thousand dollars would be a small figure, but that possibly you could make some kind of a show with that amount, but I think you ought to have twice that much.

Having had considerable experience in making large fruit shows and contending with other states than my own, I know something of the requirements and hope that those who have the control of the funds will be liberal with the fruit growers of Maine. You have a good State for growing many kinds of fruits and it would be a great advantage to have them shown up in good style so that all who see and hear of this show will be assured that Maine can produce something else than pine trees and icicles. If I can do anything to help on the good cause of Pomology in that corner of our country let me know.

Very truly,

H. E. VAN DEMAN, *Pomologist*.

This communication with other matter upon the subject was forwarded to Hon. Henry Ingalls, chairman of the fruit committee of the World's Fair Board of Managers, with a request to submit to the board at the proper time.

During our winter meeting in Cornish, the following communication was received:

Mr. D. H. KNOWLTON, Secretary State Pomological Society, Cornish, Maine.

Dear Sir: I have your programme of the meeting this week and wish you would remember me to the members. No doubt you will have a good meeting.

One thing we greatly need at this office from your State, namely: About five good specimens of the standard varieties of the apple and pear from which to make models for the Columbian Exposition. Colonel Brackett of Iowa is now engaged in such work and we want to have your State represented in the collection and as yet we have almost nothing from there. Can you not make it a point at the meeting to pack a box with characteristic specimens and send them here by express at our cost for carriage? Next summer and fall we would like the same thing to be done with other varieties.

Very truly,

H. E. VAN DEMAN, *Pomologist*.

In response to this call the executive committee sent specimens of the following varieties of apples: Tompkins King, Northern Spy, Mother, Ben Davis, Yellow Bellflower, Nodhead, Baldwin, Pound

Sweet, R. I. Greening, Starkey, Fall Pippin, Hubbardston Nonsuch, N. Y. Pippin, Munson Sweet, Baker Sweet, Bailey Sweet, Talman Sweet, Calif Sweet, Sweet Baldwin, Boardman, Fameuse, Roxbury Russet, Lord Russet, Twenty Ounce and several seedlings.

The following extracts from letters received from Mr. Van Deman show that the fruit reached its destination in safety.

“Your letter of the 19th February is just received and I trust the apples will arrive soon. We will try to make models which shall be characteristic, but if the specimens are badly bruised this will be hard to do, as the molds will take the slightest impression. Next fall I want to be sure to have good specimens from your State. I want Nodhead and all of the standard varieties so that Maine may not be left behind and especially in those varieties which succeed the best.”

“They will be used in making models as we are now getting ready for the Columbian Exposition.”

D. H. K.

OFFICERS FOR 1892.

President.

CHARLES S. POPE, Manchester.

Vice Presidents.

S. H. DAWES, Harrison.

D. P. TRUE, Leeds Centre.

Secretary.

D. H. KNOWLTON, Farmington.

Treasurer.

A. S. RICKER, Turner.

Executive Committee.

The President and Secretary, *ex officio* : H. W. Brown, Newburg ; A. E. Andrews, Gardiner ; J. W. True, New Gloucester.

Trustees.

Androscoggin County,	I. T. Waterman, East Auburn.
Aroostook	“ J. W. Dudley, Castle Hill.
Cumberland	“ S. R. Sweetser, Cumberland Centre.
Franklin	“ M. C. Hobbs, West Farmington.
Hancock	“ F. H. Moses, Bucksport.
Kennebec	“ E. A. Lapham, Pittston.
Knox	“ Elmas Hoffses, Warren.
Lincoln	“ H. J. A. Simmons, Waldeboro’.
Oxford	“ C. H. George, Hebron.
Penobscot	“ C. A. Arnold, Arnold.
Piscataquis	“ H. L. Leland, East Sangerville.
Sagadahoc	“ A. P. Ring, Richmond.
Somerset	“ James S. Hoxie, North Fairfield.
Waldo	“ D. B. Johnson, Freedom.
Washington	“ L. S. Allen, Dennysville.
York	“ B. F. Pease, Cornish.

Member of Experiment Station Council.

D. H. Knowlton, Farmington.

Committee on Nomenclature.

Z. A. Zilbert, North Greene ; D. P. True, Leeds Centre ; C. M. Weston, Belgrade.

Committee on New Fruits.

D. H. Knowlton, Farmington ; L. H. Blossom, Turner ; J. W. True, New Gloucester.

MEMBERS OF THE SOCIETY.

NOTE.—Any errors or changes of residence should be promptly reported to the Secretary. Members will also confer a favor by furnishing the Secretary with their full Christian names where initials only are given.

LIFE MEMBERS.

Andrews, A. Emery.....	Gardiner	George, C H	Hebron
Andrews, Charles E.	Auburn	Gilbert, Z A.....	North Greene
*Atherton, H. N.....	Hallowell	*Godfery, John E.	Bangor
Atherton, Wm. P.	Hallowell	Gurney, Lemuel	Hebron
Atkins, Charles G.....	Bucksport	Hackett, E C.....	West Gloucester
Atwood, Fred	Winterport	Hanscom, John	Saco
Averill, David C	Temple	Harlow, S C.....	Bangor
Bennoch, John E.....	Orono	*Harris, N. C	Auburn
Boardman, Samuel L	Augusta	Harris, N W.....	Auburn
Briggs, D. J	South Turner	Harris, William M.....	Auburn
Briggs, John	Turner	Harvey, F. L.....	Orono
Burr, John	Freeport	*Hersey, T. C.	Portland
Butler, Alonzo.....	Union	Hobbs, M. Curtis	West Farmington
Carter, Otis L.	Etna	Hoffes, Elmas.....	Warren
Chase, Henry M.....	North Yarmouth	Hoxie, James S.....	North Fairfield
Chase, Martin V. B	Augusta	Hoyt, Mrs. Francis	Winthrop
*Clark, Eliphalet.....	Portland	Ingalls, Henry	Wiscasset
Cole, Horatio G	Boston, Mass	Jackson, F. A	Winthrop
Crafts, Moses.....	Auburn	*Jewett, George.....	Portland
*Crosby, William C.....	Bangor	Johnson, Isaac A.	Auburn
Dana, Woodbury S.....	Portland	Jordan, Francis C.....	Brunswick
Dawes, S. H.....	Harrison	Kenniston, E. H.....	Arnold
DeRocher, Peter	Bradentown, Fla	Knowlton, D. H.....	Farmington
Dirwanger, Joseph A.....	Portland	Lapham, E. A.....	Pittston
Dunham, W. W.....	North Paris	Lombard, Thurston M.....	Auburn
Dyor, Milton	Cape Elizabeth	Low, Elijah	Bangor
*Emerson, Albert	Bangor	*Low, S. S.....	Bangor
Emerson, Charles L	South Turner	McLaughlin, Henry	Bangor
Farnsworth, E. B.....	Portland	Merrill, T. M.....	West Gloucester
Frost, Oscar F	Monmouth	*Metcalf, M. J	Monmouth
*Gardiner, Robert H.....	Gardiner	Moody, Charles H.	Turner
Gardiner, Robert H.....	Boston, Mass	Moore, William G.....	Monmouth

* Deceased.

LIFE MEMBERS—CONCLUDED.

Moor, F. A.	Waterville	Stilphen, Asbury C.	Gardiner
Morton, J. A.	Bethel	Stanley, Charles	Winthrop
Morton, William E.	Portland.	Stanley, O. E.	Winthrop
*Noyes, Albert	Bangor	Staples, G. K.	Temple
Perley, Chas. I.	Seward's (Vassalboro')	Strout, S. F.	West Falmouth
Pope, Chas. S.	Manchester	Strattard, Mrs. A. B.	Monroe
Pulsifer, D. W.	Poland	Sweetser, S. R.	Cumberland Center
Purington, E. F.	West Farmington	*Taylor, Joseph.	Belgrade
*Richards, F. G.	Gardiner	Taylor, Miss L. L.	(Lakeside) Belgrade
Richards, John T.	Gardiner	Thomas, William W., Jr.	Portland
*Richardson, J. M.	Gardiner	Tilton, William S.	Boston, Mass
Ricker, A. S.	Turner	True, Davis P.	Leeds Center
Roak, George M.	Auburn	True, John W.	New Gloucester
Robinson, Henry A.	Foxcroft	Varney, James A.	The Dalles, Oregon
Rolfe, Samuel	Portland	Vickery, James.	Portland
Sawyer, Andrew S.	Cape Elizabeth	Vickery, John.	Auburn
Sawyer, George B.	Wiscasset	Wade, Patrick.	Portland
*Shaw, Stillman W.	West Auburn	Walker, Charles S.	Peru
Simmons, H. J. A.	Waldoboro'	Waterman, Willard H.	East Auburn
*Smith, Alfred	Monmouth	*Weston, James C.	Bangor
Smith, Henry S.	Monmouth	Wharff, Charles S.	Gardiner
Starrett, L. F.	Warren	Whitney, Edward K.	Harrison
Stetson, Henry	Auburn	Woodard, Mrs. S. M.	Gardiner
*Stetson, Isaiah	Bangor	Woodman, George W.	Portland

ANNUAL MEMBERS, 1891.

Allen, W. H.	Augusta	Leech, H. T.	East Monmouth
Arnold, C. A.	Arnold	Lemont, J. M.	West Bath
Ballentine, Walter	Orono	Manning, C. H.	Lewiston
Bartlett, B. W.	East Dixmont	Merritt, E. W.	Houlton
Bartlett, M. E.	East Dixmont	Morrow, J. H.	South Smithfield
Chandler, Lucy A.	Freeport	Munson, W. M.	Orono
Cook, Elijah	Manchester	Nelson, O. C.	Upper Gloucester
Coombs, Philip	Bangor	Nutting, James.	East Perham
Crosby, Mary G.	Bangor	Perkins, L. J.	Portland
Dunning, Mrs. James	Bangor	Ridley, B. H.	Jay
Dunton, John	Lewiston	Ring, A. P.	Richmond
Dudley, A. M.	Mapleton	Swain, R. E.	West Leeds
Fairfield, F. S.	Orono, Ont.	Townsend, Mrs. B. T.	Freeport
Fuller, H. W.	Readfield	True, J. W.	New Gloucester
Grant, Mrs. Benson	Lewiston	Waterman, Mrs. Elbert.	East Auburn
Grover, Mrs. F. D.	Bean's Corner	Weston, C. M.	Belgrade
Hawkins, M. P.	Auburn	Wharff, W. R.	Gardiner
Judkins, C. E.	Auburn	Wheeler, Charles E.	Chesterville
Knight, Lizzie M.	Portland	Wheeler, Joseph B.	Corinth

* Deceased.

ANNUAL MEMBERS, 1892.

Abbott, L. F.....	Lewiston	Larrabee, P. P.....	North Sebago
Allen, W. H.....	Augusta	Munson, W. M.....	Orono
Brown, Henry W.....	Newburg	Plaisted, R. C.....	Gardiner
Cook, Elijah.....	Manchester	Small, John C.....	Cornish
Harlow, F. L.....	Turner		

ANNUAL MEMBER, 1893.

Allen, W. H.....	Augusta
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Annual Statement of the Maine State Pomological Society for the Year Ending Dec. 31, 1891.

RECEIPTS.

Cash received State Treasurer, bounty for 1890.....	\$500 00	
Agricultural Society.....	500 00	
Manufacturers' National Bank note.....	250 00	
life members	20 00	
annual members	40 00	
dividend Wiscasset Savings Bank	2 30	
Farmington Bank Stock	12 00	
Balance due Treasurer Dec. 31, 1891..	3 57	
		<u>\$1,327 87</u>

EXPENDITURES.

Cash paid Secretary's salary, 1891...	\$125 00	
clerk	9 90	
expenses.....	85 72	
premiums.....	562 00	
Knowlton, McLeary & Co , printing.....	20 47	
C. S. Pope	37 60	
A. E. Andrews	22 60	
A. E. Andrews.....	4 35	
J. W. True	20 00	
H. W. Brown	13 35	
A. S. Ricker.....	10 23	
Miss C. L. Pope.....	5 00	
W. H. Allen	2 85	
Mrs. C. D. Waterman	1 00	
Hall & Knight	93	
R. C. Pingree & Co.....	1 30	
E. W. Wood.....	28 25	
C. F. Packard	12 75	
C. H. George.....	5 00	
F. R. Partridge.....	14 80	
Lewiston Journal.....	2 25	
Smith & Reid.....	7 87	
Wiscasset Savings Bank in favor of Permanent Fund.....	72 30	
Manufacturers' National Bank note	250 00	
discount & interest,	7 45	
overpaid by Treasurer, 1890	4 90	
		<u>\$1,327 87</u>

FINANCIAL CONDITION OF SOCIETY DECEMBER 31, 1891.

ASSETS.

Due from State Treasurer, bounty for 1891.....	\$500 00	
Property owned by the Society, estimated.....	150 00	
Permanent fund, Farmington National Bank stock.....	400 00	
Wiscasset Savings Bank	129 98	
	<hr/>	\$1,179 98

LIABILITIES.

Due Manufacturers' National Bank.....	\$250 00	
Treasurer (overpaid)	3 57	
	<hr/>	\$253 57

PERMANENT FUND.

CREDIT.

By fees of 107 life members to December 31, 1891.....*	\$1,070 00	\$1,070 00
--------------------------------------------------------	------------	------------

DEBIT.

To Farmington National Bank stock	\$400 00	
amount on deposit, Wiscasset Savings Bank	129 98	
balance due permanent fund.....	540 02	
	<hr/>	\$1,070 00

A. S. RICKER, TREASURER.

TURNER, February 16, 1892.

This certifies that we have examined the accounts of A. S. Ricker, Treasurer, for 1891, and find the same correct.

H. W. BROWN,	} <i>Executive</i>
A. E. ANDREWS,	
J. W. TRUE,	

Committee.

CORNISH, February 17, 1892.

Maine State Pomological Society.

Report of the Nineteenth Annual Exhibition Held in
Lewiston, September 7, 8, 9, 10 and 11, 1891.

In accordance with recent custom the Society again joined with the Maine State Agricultural Society in holding a consolidated fair in Lewiston on the State Fair Grounds, September 7-11, 1891.

There have been larger displays of fruit, but the care of the exhibitors in selecting specimens for exhibition and arranging them upon the tables made the fair one of the most attractive to visitors.

The time was a little early to show fruit to the best advantage, but there was a profusion of flowers which were so arranged as to relieve the sameness of continuous fruit displays. The work of the committees was done promptly and with general satisfaction. So far as the officers know every one having ought to do with the pomological exhibition was well pleased.

Four counties—York, Washington, Piscataquis and Hancock—were not represented in the fruit exhibitions. Much regret was expressed in consequence, especially as the fruit shown from York county at our winter meeting was of excellent quality. We hope these counties may be represented at future exhibitions. The efforts of the Society to enforce its rules relative to the number of specimens of the different varieties meet with the approval of exhibitors.

It was a pleasure to have among our exhibitors, Mr. Elijah Low of Bangor, one of the oldest members of the Society. His exhibition of plums was one of the best ever shown at our exhibition. It is a pleasure to state that he also won honors in Massachusetts, receiving from the Massachusetts Horticultural Society a silver medal for best collection of plums. To those interested in plum culture we commend his paper on the subject published in last year's transactions.

The exhibition of flowers was very large, and the taste shown by exhibitors in arranging and caring for them deserves special mention. Of open-air flowers the display was especially large and fine.

The officers of the Society are under special obligation to Mr. E. W. Wood of West Newton, Mass., and W. H. Allen for valuable assistance in examining exhibits and awarding premiums.

The officers of the Society also desire to express their appreciation of the courteous relations existing between them and the trustees of the Maine State Agricultural Society.

List of Premiums Awarded at the Nineteenth Annual Exhibition, 1891.

APPLES—General Collections.

Best general exhibition of apples grown by the exhibitor in any part of the State: S. H. Dawes, Harrison, \$15; J. S. Hoxie, North Fairfield, \$10.

COUNTY EXHIBITIONS.

Best general exhibition of apples grown by the exhibitor in Androscoggin county: D. J. Briggs, South Turner, \$8; John Dunton, Lewiston, \$6.

For same in Aroostook county: James Nutting, Perham, \$8; Allen M. Dudley, Mapleton, \$6.

For same in Cumberland county: S. R. Sweetser, Cumberland Center, \$8.

For same in Franklin county: B. H. Ridley, Jay, \$8; E. F. Purington, West Farmington, \$6.

For same in Kennebec county: E. A. Lapham, Pittston, \$8; W. R. Wharff, Gardiner, \$6.

For same in Knox county: Alonzo Butler, Union, \$8.

For same in Oxford county: C. H. George, Hebron, \$8; Lemuel Gurney, Hebron, \$6.

For same in Penobscot county: E. H. Kenniston, Arnold, \$8; C. A. Arnold, Arnold, \$6.

For same in Sagadahoc county: A. P. Ring, Richmond, \$8; J. M. Lemont, West Bath, \$6.

For same in Somerset county: J. H. Merrow, South Smithfield, \$8.

For same in Waldo county: M. E. Bartlett, East Dixmont, \$8; B. W. Bartlett, East Dixmont, \$6.

For best collection crab apples: J. S. Hoxie, \$1; E. H. Kenniston, Arnold, 50c.

SPECIAL PREMIUMS.

For best dish of Baldwins, Gravensteins, Northern Spy, Rhode Island Greenings, Roxbury Russets, Tompkins King, consisting of twelve specimens each.

Baldwins: G. K. Staples, Temple, \$5; S. H. Dawes, \$3.

Gravensteins: S. H. Dawes, \$3; D. J. Briggs, \$2.

Northern Spy: S. H. Dawes, \$3; S. R. Sweetser, \$2.

R. I. Greenings: E. H. Kenniston, \$5; S. R. Sweetser, \$1.50; Lemuel Gurney, \$1.50.

Roxbury Russets: Lemuel Gurney, \$3; H. T. Leech, East Monmouth, \$2.

Tompkins King: S. H. Dawes, \$3; C. I. Perley, Cross Hill, \$2.

SINGLE VARIETIES.

Alexander: W. R. Wharff, \$1; C. M. Weston, Belgrade, 50c.

American Golden Russet: C. I. Perley, \$1; Hall & Wheeler, Chesterville, 50c.

Ben Davis: S. R. Sweetser, \$1; C. I. Perley, 50c.

Deane: J. S. Hoxie, \$1; A. C. Day, South Turner, 50c.

Duchess of Oldenburg: S. H. Dawes, \$1; J. S. Hoxie, 50c.

Early Harvest: B. H. Ridley, \$1; E. F. Purington, 50c.

Fallwater: C. I. Perley, \$1; C. A. Arnold, 50c.

Fall Harvey: B. H. Ridley, \$1; Hall & Wheeler, 50c.

Fameuse: S. H. Dawes, \$1; B. H. Ridley, 50c.

Garden Royal: D. C. Averill, Temple, \$1; C. I. Perley, 50c.

Hubbardston Nonsuch: S. H. Dawes, \$1; T. M. Lombard, Auburn, 50c.

Jewett's Fine Red: S. H. Dawes, \$1; A. R. King, No. Monmouth, 50c.

King Sweeting: C. I. Perley, \$1; E. F. Purington, 50c.

Large Yellow Bough: S. H. Dawes, \$1; Alonzo Butler, 50c.

McIntosh Red: S. R. Sweetser, \$1; H. G. Fairbanks, North Monmouth, 50c.

Milding: C. I. Perley, \$1.

Mother: W. R. Wharff, \$1; S. R. Sweetser, 50c.

Munson Sweet: B. H. Ridley, \$1; S. R. Sweetser, 50c.

Peck's Pleasant: J. S. Hoxie, \$1; A. E. Andrews, Gardiner, 50c.

Pomme Royal: C. H. George, \$1.
 Porter: Hall & Wheeler, \$1; S. H. Dawes, 50c.
 Pound Sweet: S. H. Dawes, \$1; C. I. Perley, 50c.
 President: I. T. Waterman & Sons, East Auburn, \$1.
 Primate: S. H. Dawes, \$1; E. F. Purington, 50c.
 Pumpkin Sweet: E. F. Purington, \$1; S. H. Dawes, 50c.
 Red Astrachan: S. R. Sweetser, \$1; A. P. Ring, 50c.
 Red Canada: H. G. Fairbanks, \$1; C. A. Arnold, 50c.
 Rolfe: S. R. Sweetser, \$1.
 Russell: E. F. Purington, \$1; D. C. Averill, 50c.
 Somerset: H. G. Fairbanks, \$1; S. R. Sweetser, 50c.
 Starkey: C. I. Perley, \$1.
 Talman's Sweet: E. H. Kenniston, \$1; Hall & Wheeler, 50c.
 Tetofsky: J. S. Hoxie, \$1; E. F. Purington, 50c.
 Wagener: Hall & Wheeler, \$1; S. H. Dawes, 50c.
 Wealthy: T. M. Lombard, \$1; S. R. Sweetser, 50c.
 William's Favorite: S. H. Dawes, \$1; C. I. Perley, 50c.
 Winthrop Greening: A. P. Ring, \$1; H. G. Fairbanks, 50c.
 Yellow Bellflower: E. A. Lapham, \$1; A. E. Andrews, 50c.
 Yellow Transparent: E. F. Purington, \$1.

PEARS—General Exhibitions.

S. H. Dawes, \$10; L. J. Perkins, Portland, \$8; C. M. Weston, \$5.

SINGLE VARIETIES.

Clapp's Favorite: A. S. Ricker, Turner, \$3; S. H. Dawes, \$2.
 Bartlett: S. H. Dawes, \$3; A. S. Ricker, \$2.
 Belle Lucrative: Alonzo Butler, \$1; C. I. Perley, 50c.
 Beurre d'Anjou: H. T. Leech, \$1; S. H. Dawes, 50c.
 Beurre Superfin: D. P. True, Leeds Center, \$1; S. H. Dawes, 50c.
 Beurre Clarigean: C. M. Weston, 50c.
 Buffum: D. P. True, \$1; C. I. Perley, 50c.
 Doyenne Boussock: S. H. Dawes, \$1; H. T. Leech, 50c.
 Duchess d'Angouleme: S. H. Dawes, \$1.
 Eastern Belle: J. S. Hoxie, \$1.
 Fulton: L. J. Perkins, \$1.
 Glout Morceau: C. I. Perley, \$1.

Goodale: S. H. Dawes, \$1; C. M. Weston, 50c.
Howell: S. H. Dawes, \$1; J. S. Hoxie, 50c.
Lawrence: S. H. Dawes, \$1; John Duntun, 50c.
Louise Bonne de Jersey: S. H. Dawes, \$1; C. H. George, 50c.
Nickerson: C. M. Weston, \$1.
Seckel: D. P. True, \$1; S. H. Dawes, 50c.
Sheldon: S. H. Dawes, \$1; C. M. Weston, 50c.
Souvenir du Congress: L. H. Blossom, Turner Center, \$1.
Urbaniste: William Stuart, Lewiston, 50c.

GRAPES—General Exhibitions.

For best collection of air-grown grapes: S. H. Dawes, \$3.

SINGLE VARIETIES.

Black Hamburg: C. H. Manning, Lewiston, \$1.
Golden Hamburg: C. H. Manning, \$1.
Sweet Water: C. H. Manning, \$1.
Royal Hamburg: C. H. Manning, \$1.

PLUMS—General Exhibition.

Elijah Low, Bangor, \$6; S. H. Dawes, \$4.

SINGLE VARIETIES.

Bavay's Green Gage: E. F. Purington, \$1.
Bradshaw: E. F. Purington, \$1; Elijah Low, 50c.
Green Gage: C. A. Arnold, \$1; D. H. Knowlton, Farmington, 50c.
Prince's Imperial Gage: T. M. Lombard, \$1; D. P. True, 50c.
General Hand: Lemuel Gurney, \$1.
Guil: John Duntun, \$1; E. F. Parington, 50c.
Jefferson: Elijah Low, \$1.
Lawrence: Elijah Low, \$1.
Lombard: Elijah Low, \$1; C. H. George, 50c.
Magnum Bonum: Elijah Low, \$1.
McLaughlin: Elijah Low, \$1; Mrs. James Dunning, Bangor, 50c.
Moore's Arctic: Mrs. James Dunning, \$1; Elijah Low, 50c.

Niagara: John Dunton, \$1.

Penobscot: Elijah Low, \$1.

Washington: Elijah Low, \$1; E. F. Purington, 50c.

Yellow Egg: Lemuel Gurney, \$1.

MISCELLANEOUS ARTICLES—Canned Fruit, Preserves, etc.

For most artistic display of fruits and flowers: Alouzo Butler, \$4.

Best dish of peaches: S. H. Dawes, \$2.

Abyssinian banana: R. E. Swain, West Leeds, \$2.

Collection canned fruits, etc.: Mrs. Benson Grant, Lewiston, \$8; Mrs. Herman Corbett, Farmington, \$5.

Collection apple jellies: Mrs. Benson Grant, \$2; Mrs. F. D. Grover, Bean's Corner, \$1.

Canned blackberries: Mrs. E. F. Purington, West Farmington, 50c.; Marcia Rose, North Greene, 25c.

Canned blueberries: D. C. Averill, 50c.; Miss Annie E. True, South Turner, 25c.

Canned cherries: Mrs. E. F. Purington, 50c.; Mrs. Elbert Waterman, East Auburn, 25c.

Canned gooseberries: Mrs. Herman Corbett, 50c.; Mrs. Francis Hoyt, Winthrop, 25c.

Canned peaches: Mrs. J. B. Hunton, Auburn, 50c.; Mrs. Elbert Waterman, 25c.

Canned pears: Mrs. J. B. Hunton, 50c.; Mrs. C. E. Judkins, Auburn, 25c.

Canned plums: Mrs. Francis Hoyt, 50c.; Mrs. Elbert Waterman, 25c.

Canned quinces: Mrs. Benson Grant, 50c.; Mrs. Francis Hoyt, 25c.

Canned raspberries: Mrs. E. F. Purington, 50c.; Mrs. Elbert Waterman, 25c.

Canned strawberries: Marcia Rose, 50c.; Mrs. Francis Hoyt, 25c.

Canned tomatoes: Mrs. Francis Hoyt, 50c.; Mrs. Elbert Waterman, 25c.

Preserved apples: Marcia Rose, 50c.; D. C. Averill, 25c.

Preserved currants: Miss E. B. Butler, Union, 50c.; Mrs. Herman Corbett, 25c.

Preserved cherries: Mrs. Herman Corbett, 50c.; Mrs. Francis Hoyt, 25c.;

Preserved pears: Mrs. D. S. Thomas, North Auburn, 50c.; Mrs. Herman Corbett, 25c.

Preserved plums: Mrs. Francis Hoyt, 50c.; Mrs. Elbert Waterman, 25c.

Preserved quinces: Mrs. Francis Hoyt, 50c.

Preserved raspberries: Mrs. Herman Corbett, 50c.; Mrs. Elbert Waterman, 25c.

Preserved strawberries: Miss E. B. Butler, 50c.; Mrs. Herman Corbett, 25c.

Assorted pickles: Mable E. Grover, Bean's Corner, 50c.; Mrs. Benson Grant, 25c.

Tomato catsup: Mrs. Francis Hoyt, 50c.; Mrs. C. E. Judkins, 25c.

Apple jelly: Miss E. B. Butler, 50c.; Mrs. D. S. Thomas, 25c.

Currant jelly: Mrs. Benson Grant, 50c.; Mrs. Elbert Waterman, 25c.

Grape jelly: Mrs. Francis Hoyt, 25c.

Quince jelly: Mrs. Francis Hoyt, 50c.; Mrs. Benson Grant, 25c.

Raspberry jelly: Mrs. F. D. Grover, 50c.; Mrs. Elbert Waterman, 25c.

Rhubarb jelly: Mrs. Benson Grant, 50c.; Mrs. Elbert Waterman, 25c.

Strawberry jelly: Mrs. Francis Hoyt, 50c.; Mrs. Elbert Waterman, 25c.

Maple syrup: C. H. George, 50c.; W. B. Fletcher & Son, Stark, 25c.

CUT FLOWERS.

Best display cut flowers: Charles S. Walker, Peru, \$10; Mrs. Charles Stanley, Winthrop, \$8; Mrs. B. T. Townsend, Freeport, \$5; Mrs. A. B. Strattard, Monroe, \$3.

Exhibition of roses: W. E. Morton & Co. of Portland, \$5; John Burr, Freeport, \$3.

Dahlias: Mrs. Chas. Stanley, \$2; Mrs. B. T. Townsend, \$1.

Chinese pinks: Charles S. Walker, \$1; Mrs. B. T. Townsend, 50c.

Carnations: Mrs. Lucy A. Chandler, Freeport, \$2; W. E. Morton & Co., \$1.

Lilies: Charles S. Walker, \$2; Mrs. Charles Stanley, \$1.

Asters: Charles S. Walker, \$1; Mrs. Lucy A. Chandler, 50c.

Pansies: Mrs. H. W. Fuller, Readfield, \$1; Charles S. Walker, 50c.

Zinnias: Mrs. Charles Stanley, \$1; Mrs. Francis Hoyt, 50c.

Phlox Drummondii: Mrs. Elbert Waterman, \$1; Mrs. Charles Stanley, 50c.

Balsams: Mrs. Elbert Waterman, \$1; E. C. Pope, Manchester, 50c.

Petunias: Mrs. Elbert Waterman, \$1; Mrs. D. H. Knowlton, Farmington, 50c.

Gladioli: Charles S. Walker, \$2; Mrs. Lucy A. Chandler, \$1.

Verbenas: Mrs. H. W. Fuller, \$2; Mrs. Francis Hoyt, \$1.

Calendulas: Mrs. Charles Stanley, 50c.

Nasturtiums: E. C. Pope, \$1; Mrs. Elbert Waterman, 50c.

Vase of cut flowers (amateur): Mrs. D. H. Knowlton, \$3; Mrs. H. W. Fuller, \$2; Mrs. Francis Hoyt, \$1.

Best twelve button-hole bouquets: John Burr, \$2.

Floral design (professional): John Burr, \$8.

Floral design (amateur): Miss Lizzie Knight, 617 Congress St., Portland, \$5; Mrs. Lizzie M. Walker, Peru, \$3.

Floral wreath: W. E. Morton & Co., \$2; Lucy B. Burr, Freeport, \$1.

Floral dinner table decoration: Mrs. H. W. Fuller, \$2; W. E. Morton & Co., \$1.

Dish of cut flowers: W. E. Morton & Co., \$2.

Basket of cut flowers: W. E. Morton & Co., \$2; Mrs. D. H. Knowlton, \$1.

Artistic exhibition of dried grasses: Mrs. Charles Stanley, \$2.

Artistic exhibition of everlasting flowers: Mrs. Charles Stanley, \$1; Mrs. H. W. Fuller, 50c.

GREENHOUSE AND POT PLANTS.

Exhibition greenhouse plants: John Burr, \$15; Charles S. Walker, \$10.

Pot plants: Mrs. Lucy A. Chandler, \$10; Mrs. Anthony Cummings, Auburn, \$8.

Ferns: John Burr, \$3.

Geraniums: John Burr, \$2.

- Begonias: John Burr, \$2.
 Coleus: Charles S. Walker, \$2; John Burr, \$1.
 Dracæna: John Burr, 50c.
 Double Geranium: John Burr, 50c.
 Single Geranium: John Burr, 50c.
 Salvia Splendens: John Burr, 50c.
 Foliage Begonia: John Burr, 50c.
 Flowering Begonia: John Burr, 50c.; Mrs. Charles Stanley,
 25c.
 Coleus: Charles S. Walker, 50c.; John Burr, 25c.
 Fuchsia: John Burr, 50c.
 Carnation: John Burr, 50c.
 Single pot plant: Charles S. Walker, \$1; Mrs. Lucy A. Chandler,
 50c.
 Wardian Case: Charles S. Walker, \$1.

SPECIAL PREMIUMS.

- Floral design arranged by boy or girl under fifteen: Lucy B.
 Burr, \$3; Iola Agnes Walker, Peru, \$2.
 Cut wild flowers: Mrs. C. E. Waterman, East Auburn, \$3.
 Pressed wild flowers: John G. West, Lewiston, \$1.

Summary.

Apples	\$254 00
Pears ..	56 50
Grapes	7 00
Plums..	30 00
Canned fruits, etc.....	45 00
Flowers	169 50
	<hr/>
	\$562 00

Business Transactions.

MEETINGS OF EXECUTIVE COMMITTEE.

March 12, 1891. The committee met at Leeds Junction for the revision of the premium list for 1891.

It was voted to accept an invitation of the trustees of the Maine State Agricultural Society to hold the next annual exhibition of the Society in connection with the exhibition of that society in Lewiston, September 7-11, 1891.

In reply to the above the Secretary received the following letter from the secretary of that society under date of May 16, 1891 :

MR. D. H. KNOWLTON,

Secretary, Maine State Pomological Society, Farmington.

MY DEAR SIR :—It gives me pleasure to report that, at the meeting of the trustees of the State Agricultural Society, held in Lewiston, Monday, May 11th, it was unanimously voted to extend an invitation to the State Pomological Society to hold a joint exhibiton on the Fair Grounds, Lewiston, September 7-11, inclusive, upon the same conditions as in 1890.

Very respectfully,

G. M. TWITCHELL, *Secretary.*

May 27th, Messrs. Pope, Andrews and the Secretary appeared before the Board of Managers of the World's Fair held in Augusta, and presented to the Board the interests of Maine fruit growing, and urged upon the committee the importance of giving the industry a conspicuous place in our Maine exhibition.

October 28th, the committee met at Augusta in the rooms of Secretary of the Board of Agriculture. The accounts of the Society were audited and the treasurer was authorized and directed to make a temporary loan not exceeding three hundred and fifty dollars to meet the current bills of the Society.

The treasurer was also instructed to pay the premiums awarded at the last exhibition to the amount of \$562.00, as per schedule furnished by the Secretary.

Plans for the winter meeting were discussed and the details were referred to the president and secretary.

Later, on invitation of Mr. B. F. Pease, member of the Board of Agriculture for York county, representing the Ossipee Valley Agricultural Society and citizens, arrangements were perfected for holding the meeting in Cornish.

PUBLIC MEETINGS.

September 11, 1891. Annual meeting of the Society, held in Park Hall, Lewiston, at 6.30, P. M. Officers for 1892 were elected. See p. 9.

After the election of officers, the Society was addressed by Mr. E. W. Wood, chairman of the fruit committee of the Massachusetts Horticultural Society.

Prof. Munson and others were present at the meeting and joined in the discussions following the address.

February 17 and 18, 1892. During the winter meeting held in Cornish the following business was transacted :

Report of treasurer was presented and accepted. See p. 13.

The secretary read a letter from G. M. Twitchell, secretary of the Maine State Agricultural Society, inviting our Society to hold a joint exhibition with them in Lewiston, September 6-9, 1892, on the same terms as in 1891. It was voted to accept the invitation and to refer the details of the exhibition to the executive committee.

Prof. W. M. Munson, Prof. Elijah Cook and A. S. Ricker were appointed a committee to examine the fruit on exhibition and reported as follows :

REPORT OF FRUIT COMMITTEE.

The exhibit of fruit while not large, is in the main of a good character. Some of the standard varieties, however, are poorly represented. Only two plates of Northern Spys do that variety full justice. The display of Bellflowers deserve special mention. The quality being above the average.

The largest collection exhibited was that of S. H. Dawes of Harrison. This exhibit while very creditable in itself was injured by

frost and was not placed in competition with the other smaller collections.

Aside from the collection named, your committee would name as first in point of excellence the collection of C. E. Jones of Sweden ; second, that of William Warren of Cornish, and third, that of W. R. Wharf of Gardiner. Creditable collections were also exhibited by D. P. True, Leeds Center ; Charles S. Pope, Manchester ; W. R. Sturdivant.

SINGLE PLATES.

BELLFLOWER—A. E. Andrews of Gardiner, exhibited some specially fine fruits.

BALDWIN—Exhibited by J. W. True of New Gloucester, and C. E. Wheeler of Chesterville. Those shown by Mr. True were of special merit.

BEN DAVIS—J. W. True, New Gloucester.

POUND SWEET—J. W. True.

WEALTHY—James Nutting, Perham, Aroostook county. The specimens are well selected and of interest as showing the variety on which the growers of northern Aroostook depend for winter fruit.

BOTTLE GREENING—John Hanscom, Biddeford.

BIDDEFORD, Me., February 18, 1892.

Dear Sir: I sent you day before yesterday a small box of "Bottle Greening" apples, thinking the variety is not so well known in Maine as its merits entitle it to. The trees are hardy and thrifty ; good bearers—a full crop one year and a smaller one the next. The apple stands well in our markets, where they are now quite well known. The bark of the Bottle Greening tree is of as light color as a common willow tree.

I hoped to have been able to have attended the Cornish meeting, but other engagements prevent.

Yours truly,

• JOHN HANSCOM,

Former Editor and Proprietor of "The Maine Sentinel."

Three baskets of Baldwins said to be of the original type, exhibited by R. G. Smith of Cornish, are deserving of mention ; as are also the specimens of *Vicar* pears shown by D. P. True of Leeds Centre.

An interesting feature of the exhibit is the collection of forced vegetables from the forcing house of the State College. This collection consists of three varieties of tomatoes, two varieties of radishes, one variety of carrot, three varieties of cucumbers, one

variety of snap beans. A specimen of Pepino or "Melon Shrub" from the same source is of interest.

E. COOK.

A. S. RICKER.

W. W. MUNSON.

A. E. Andrews, W. A. Luce and D. H. Knowlton were appointed a committee on resolutions, and reported as follows :

Resolved, That the thanks of the Maine State Pomological Society are hereby tendered to the Ossipee Valley Agricultural Society for their kind reception and thoughtful attention shown during this meeting.

Resolved, That our thanks be extended to the citizens of Cornish and vicinity for their cordial reception.

Resolved, Further, that our thanks be extended to the Maine Central and Saco River Railroad for the courtesy shown to us of reduced rates over their lines to attend this meeting.

Resolved, That our thanks be extended to the press for their notices of the meeting and to their representatives for their excellent reports.

Resolved, That our thanks are especially due to the Cornish Glee Club for their most excellent music, adding so much to the enjoyment of the occasion.

A. E. ANDREWS.

WILLIS A. LUCE.

D. H. KNOWLTON.

After discussing the subject the following resolution was passed : That a committee of three be appointed to consider the advisability of petitioning the next legislature for an increased appropriation for the Society, the committee to report at the annual meeting.

The following committee was chosen ; D. H. Knowlton, Chas. E. Wheeler, Willis A. Luce.

The President read a letter from Gen. Chas. P. Mattocks, to the effect that he expected to be with us and present an outline of work for the Columbian Exposition.

The matter of making an exhibition at the World's Columbian Exposition was referred to the executive committee.

A communication from the division of Pomology was read as follows :

U. S. DEPARTMENT OF AGRICULTURE,
DIVISION OF POMOLOGY,
WASHINGTON, D. C., November 1, 1891 }

To the Horticultural Societies of the United States:

As the means of securing concerted and mutually beneficial action between the Department and persons interested in Pomology and kindred subjects throughout the country, it is suggested—

1st. That, through the State Horticultural Society or similar organization, provision be made in each State and Territory for supplying to the Department for the Division of Pomology a complete and annually corrected list of officers and members of State and local organizations of fruit-growers, with their post-office addresses and the specialties in which they are interested.

2nd. That the Secretary of each State Society send to the Department for the Division, as soon as determined, the name of the place and the date of each meeting, and, as soon as issued, the programme for the meeting.

3rd. That each Society, State and local, supply the names and addresses of members of a standing committee, consisting of reliable and experienced fruit-growers, to respond to the circulars of inquiry which may from time to time be sent out for the Division.

The Department, as far as practicable—

Makes free distribution of bulletins and other publications of the Division of Pomology as well as those of other and kindred Divisions, upon the basis of lists of members furnished.

Invites the sending of specimens of new varieties for estimates of probable value; of unrecognized varieties for identification; and of known varieties from localities in which they are specially successful, for examination and description. On application, mailing boxes and franks will be sent for such purposes.

Distributes, at certain times, a limited supply of seeds, scions, or plants of imported or little-known fruits; and these are placed for testing in localities where they are likely to receive proper care and suitable conditions of climate and soil.

The proposed co-operation will be greatly aided if the regular meetings of the societies of adjacent states are so timed that they do not occur on the same dates. This will make possible in some cases the attendance of a representative of the Department at a series of State meetings, and it is suggested that the executive boards of State societies consider this when arranging for the dates of their annual meetings.

Very respectfully,

EDWIN WILLITS,
Assistant Secretary.

U. S. DEPARTMENT OF AGRICULTURE. }
DIVISION OF POMOLOGY, }
SOUTH HAVEN, MICH., November 21, 1891. }

PRESIDENT CHAS. S. POPE:

Dear Sir: Believing that the suggestions of the enclosed circular offer inducements of much value to societies in the way of increased inducements to membership, I request that you cause the matter to be laid before your Society when in session, and I be informed of the action taken and of the further wishes of the Society in the case.

Very truly yours,

T. T. LYON,
Agent in special charge.

In conformity to the foregoing request a committee was appointed as follows: Willis A. Luce, South Union; James Nutting, East Perham, and Willard H. Waterman, East Auburn.

PAPERS, DISCUSSIONS, REPORTS, ETC.,

PRESENTED AT THE

UNION WINTER MEETING

OF THE

Maine State Pomological Society and the State Board of Agriculture,

HELD IN

SMITH & WARREN'S HALL, CORNISH,

February 17th and 18th, 1892.

Mine host — it was an apple-tree —
 He smilingly received me,
And spread his choicest, sweetest fruit
 To strengthen and relieve me.
And when I rose and would have paid
 My host so open-hearted,
He only shook his lofty head —
 I blessed him and departed.

— *From the German.*

The Union Winter Meeting.

INTRODUCTORY.

In order to extend the influence of the Maine State Pomological Society in the western part of the State the officers of the Society were unanimously in favor of holding the 1892 winter meeting in York county. In due time there came a cordial invitation from Mr. B. F. Pease, member of the Board of Agriculture, in behalf of the Ossipee Valley Agricultural Society and citizens to hold the winter meeting in Cornish. Under these circumstances it was a pleasure to accept the invitation, and largely to the cordial co-operation of citizens the Society is indebted for one of its most successful meetings.

Secretary McKen of the Board of Agriculture took an active personal interest in shaping the programme and conducting the meeting. The relations existing between the Society and the Board are very cordial. A union of forces adds strength and enables both organizations to do the most efficient work. It is hoped these pleasant relations may continue in the future.

Under these favorable auspices the winter meeting was held in Smith & Warren's Hall, Cornish, Wednesday and Thursday, February 17th and 18th, 1892. The following programme was announced in due time:

PROGRAMME.

Wednesday, A. M.

Opening Exercises. Reports of Officers.

Address of Welcome, George F. Clifford, Esq., Cornish.

Response, B. Walker McKen, Secretary State Board of Agriculture.

President's Annual Address, Charles S. Pope, Manchester.

AFTERNOON.

Our Labors and Our Rewards in Fruit Culture,

J. W. True, New Gloucester.

Fruit Exhibitions,

D. H. Knowlton, Secretary Maine State Pomological Society

EVENING.

Our Chosen Family,
Pear Culture,

Willis A. Luce, South Union.
S. H. Dawes, Harrison.

Thursday, A. M.

Experiments in Spraying.

W. M. Munson, Professor of Horticulture, State College

AFTERNOON.

Grape Culture,
Selling Our Fruit,

Henry W. Brown, Concord, Mass.

Chas. E. Wheeler, Ex-Member of the Board of Agriculture, Chesterville.

EVENING.

Fruit Growing in Maine Compared with other Agricultural Industries,

L. F. Abbott, Agricultural Editor, Lewiston Journal.

How Shall We Keep the Boys on the Farm?

Prof. Elijah Cook, Manchester.

The papers and addresses were followed by discussions which were joined in by a large number of fruit growers from various parts of the State. The papers and discussions bore directly on practical fruit topics and were listened to with interest.

The exhibition of fruits though not as large as at some former meetings was of excellent quality. This is especially true with reference to Yellow Bellflowers, Tompkins King, Baldwins and one or two other varieties. It was a pleasure to note the fine fruit shown by the fruit growers in and about Cornish. Several varieties were especially deserving of notice.

The officers of the Society desire to express their gratitude to the officers of the Ossipee Valley Agricultural Society and the citizens of Cornish, for their hearty co-operation in carrying on the meetings. Interest in the meetings increased until the last and all seemed well-pleased with the results. The *Portland Press* and *Eastern Argus* were represented by special reporters and gave extended reports of each session. Other papers in the State were represented and gave excellent reports of the meetings.

It should be borne in mind by the reader that the papers and discussions following are the ideas of individual fruit growers, and do not necessarily bear the approval of the Society. They are, however, the results of large experience in fruit growing and deserving of careful consideration.

OPENING EXERCISES.

At the appointed hour February 17, 1892, in Smith & Warren's Hall, in Cornish, George F. Clifford, Esq., in behalf of the Ossipee Valley Agricultural Society and the citizens of Cornish and vicinity gave the following

ADDRESS OF WELCOME.

In simple, honest words, such words as come unbidden to the lips when out of the fullness of the heart the mouth speaketh, and in that word of all word else, that in such similitude pervades so wide a range of distant differing tongues, in arctic chill and tropic heat, on Greenland's icy mountains and India's coral strand, alike the type and essence of a hearty greeting to a stranger guest, in behalf of the people of this vicinity I bid you welcome among us.

I believe that one of the great privileges attaching the human race is intercommunity; the reciprocal interchange of ideas and belief. Man is a social being and to be a man he must be social. He who is otherwise in taste and tendency is a perversion.

Solitude breeds selfishness. Selfishness breeds envy. Envy is the parent of hate and at the feet of hate there sprout a multitude of vices and of crimes. The purpose and the method of a man like this are warped to suit the bent of his depraved mentality. Honor and manhood sink beneath a swelling tide of wrong, to cover which hypocrisy outspread her tattered mantle and when that convict garb is once assumed, the devil has foreclosed his mortgage and redemption has expired. How opposite the picture of the life of him who carried out the purpose of his being and mingles as a man among his fellows.

An honest, manly pride becomes the mainspring of his being. Before his eyes in constant panorama pass the work, the graces and accomplishments of his associates. Their example is his inspiration, and to be like them is the goal of his ambition. At the feet of wisdom, from the scholar's lips and in the teachings of experience he learns the way and travels it to its grand end. Somehow, somewhere in that life journey, by the operation of a law not made with hands, something is done, some particle is added to the great mosaic of our social life without which it would be unfinished, incomplete as far as wrought.

I mean that when a man perverts his nature to its baser possibilities society suffers an injury; and when a man gives to his faculties their true direction and development the race is benefited, and I say that in social intellectual intercourse there does exist and can be found a great promoting power of mankind's dearest interests.

The field is broad and marvelous in its diversity of surface and capacity. By far the greater portion of its vast expanse is yet unbroken by the plow. But each new year brings in new ground, and every year brings new conceptions of the truth that head and hand can work together everywhere and that each occupation has as much its field of thought and study as of manual toil. There comes new meaning to the dictum that man shall eat his bread in the sweat of his brow. This great truth you, my friends, who are to-day our honored guests, have come to demonstrate to us and in behalf of our people and their agricultural and pomological interests and in behalf of social intellectual development and progress everywhere, I thank you for your presence and bid you God-speed in your noble work.

RESPONSE BY HON. B. WALKER MCKEEN.

It seems hardly fitting that I should be called upon to utter a word at a meeting devoted to the interests of fruit growing. Being a novice in the business I can only say a few words, by way of responding to the eloquent words of welcome, with which the honorable gentleman has greeted us. It is always pleasant to receive such words of welcome and encouragement, coming, as they do, with such evidences of hearty sympathy for our work.

The study of pomology is fraught with many difficulties, but is, I believe, very enchanting to all those who have a genuine love for the trees, shrubs and flowers with which God has beautified and adorned our hill-sides and valleys. The science has a marked and prominent place in our country's history, as well as in the history of the world. Particularly the apple takes its place as an exponent of all that is beautiful and desirable. From the time when it tempted our first parents, until to-day, it has been a constant source of help and encouragement to all mankind, and I trust that I may be pardoned if I say that, in my judgment, it is destined to play a still greater part in our history, from this time on, until it shall become a most potent factor in bringing us back to Eden.

When the Israelites sent out their spies to explore the promised land they brought back a single cluster of grapes, so large that it was carried on a pole between two men. I have often studied this picture when a boy and wondered at the fertility of the soil which was capable of producing such beautiful specimens of this most luscious fruit. The value of our farms must be rated, not by their acreage, but by the amount of their available fertility. And as we grow more proficient in the art of growing fruit, it has become a symbol of our fertile soil and our national prosperity; just as the grapes of Eschol were considered by those weary, foot-sore but courageous and clear-headed men of old, to be the best evidence of the fertility of the promised land.

Mr. President, I believe there is one point which we, as a people, overlook. It is a point worthy of our careful consideration. As we study out the mysteries of our art and become more and more proficient in it we must of necessity become better men and better women, capable of higher and nobler achievements. Thus the scale of humanity becomes raised and a long stride is taken in the advancement of civilization.

The American Pomological Society was formed in 1850, and has had much to do with the rapid advancement in the knowledge of the best methods of cultivating fruits. Its history is replete with items of great moment and it has had for active workers in its ranks some of the best men this country has produced. Who does not know and honor such men as Wilder, Hancock, Barry, Thomas, Warder, Elliott, Prince, Manning, Field, Campbell and Strong? In fact, these men and the cause for which they labored, have so far interwoven themselves into our history as to become a part of our national existence.

There are many reasons why the study of pomology should be encouraged in our State. Here are found the soil and climate which are adapted to growing, to perfection, nearly every variety of fruit, both large and small.

Many acres of unoccupied land are only waiting for the hand of the tree planter, to bloom into a second Eden, from which no serpent will lure us, and to which all eyes will turn with pride. Gentlemen, the Society comes before you with some of the best representative pomologists in our State, and will endeavor to present lectures which shall contain valuable instruction; but remember that none of the speakers profess to be infallible. They come as learners, as well as

teachers, and if, at any time, any of you wish to ask questions or make suggestions I trust you will feel at perfect liberty to do so. Please remember that this is your meeting, and that it is my wish as well as the wishes of the representatives of the Pomological Society that it be conducted as you desire. The only favor we ask, is that you carefully consider all the points which may be brought up, and, if any of them commend themselves to you, as worthy, that you put them into practice. Your duty to this meeting continues after it is closed. If you will do it fully, you must endeavor to carry to your homes the facts as presented, and put them into your every day practice. Weave them into your life work, and thus become a factor in promoting the higher and more noble development of your town, your county, and your State.

Mr. President, again thanking you, and through you the citizens of Cornish and vicinity for this most cordial welcome, I will say that we are ready for the business of the day.

Mr. Charles S. Pope, President of the Society, being introduced, gave his

ANNUAL ADDRESS.

Ladies and Gentlemen, Members of the Pomological Society:

As I greet you again on this our nineteenth anniversary, it is natural to take a retrospective view, to learn what we have accomplished, and note the advancement that has been made in every branch of horticulture. There has been a wonderful increase in our orchard products since the organization of this Society, with new markets opened, which now take our surplus, with as good prices as in former years.

The prevailing low prices of the present season have discouraged many apple growers and led them to believe that the business is overdone and that an apple orchard is now poor property. But let us compare this with the other farm crops. In favorable seasons the price obtained for many of these, is below the cost of production. But even this, however, is not wholly lost. Our fruit in such seasons reaches many who are unable to pay the higher prices. Our surplus can be shipped with a profit to more distant markets, and this may accrue to our advantage in future years.

The most marked progress has been in the growing of small fruits. Twenty years ago a garden of small fruits was rarely seen outside

the villages, where now are found acres of berries for which we have a good market at remunerative prices. The strawberry in particular is found to be a very profitable crop when rightly managed, as our people consume large quantities of this berry, and now depend largely upon other states for a supply. Therefore, so long as the demand is larger than the supply, we have the advantage of being able to furnish fresh berries directly to the consumer, and consequently at better prices than are realized by those in the older fruit growing sections, where there is more competition.

The growing of plums which had been nearly abandoned, has been started again with good prospect of success. We are now able to control the "black knot" and destroy the *encreulio*, and judging from the fruit displayed at our exhibition the past two years, our people will soon supply themselves and the markets with an abundance.

It is now expected that this Society will be called upon to take charge of collecting and forwarding the fruit for exhibition to the Columbian Exposition in 1893. This will give the people of Maine a grand opportunity to show the world that the State of Maine, if unable to raise the largest fruit, can excel in coloring and quality, and can raise some of the winter apples for shipping, to better advantage than any other state in the Union.

If our fruit growers are alive to their interests and are willing to give us their assistance, we shall be able to make an exhibition which will be of great advantage to the State and perhaps open new markets for our fruits. We must at least show, and this we can do, that we can produce the best shipping fruits of the country. It will require more labor and time, than any of our officers are able to give, and we must have the co-operation of all the best fruit growers of the State.

Our greatest effort in former years, has been to induce the farmers to set more trees and vines. Our aim now should be, to urge them to take better care of those already set if they would get the best returns for their investment. With the great increase of insects and the injury from fungi and other diseases we predict that the common farmer will grow less apples in the coming years and the business will pass more into the hands of specialists, who have more time and taste to contend with these pests. No doubt in future years, the spraying apparatus will be considered as necessary in fighting these enemies of the orchard, as the planter and harrow in the cornfield.

In most of our old orchards the natural fertility of the soil is somewhat exhausted. Diseases have multiplied and insects have increased wonderfully. The situation has changed, and he who would reap much of a harvest must be able to meet all these new conditions. More attention must be given to fertilizing the orchard, and with the aid of the scientist, we shall be able to combat both insects and diseases.

What is the lesson for fruit growers in the bountiful crop and low prices of the past year? We find many discouraged ones who will neglect the orchard and fruit garden, until a year of better prices, to find then the trees and vines weak and dying for want of proper care. With seasons of such low prices the people will learn to consume more fruit, and thus it will become a necessity to such, and will help to keep up the price in future years. The cost of raising and marketing fruit must be reduced to a minimum. First by better care and fertilizing, to raise more and better fruit; by the use of arsenical poisons to destroy the insects and some fungicide to hold diseases in check and more care in the selection of varieties which will find a ready market.

In many cases the thinning of apples will pay a large profit, as a tree overloaded will bear fruit too small for market, and also injure the tree, both by exhausting its vitality and breaking its branches.

Thinning fruit has been practiced for many years in our pear orchards, and we think will give the best of results to those who wish to raise choice apples that will bring fancy prices.

After reading the reports of the sales of Maine apples in Liverpool this season I am most thoroughly convinced that some plan should be devised to keep up the reputation of our apples abroad. I am aware that Maine fruit was, on the whole, very poor this year. The fall was quite warm and the winter fruit matured rapidly and was not as firm as usual, so that after remaining a week or more on the warm steamer, much of it arrived in very poor condition and the shipper realized little, if anything, for his apples. I saw many apples packed this winter and do not wonder that a large part of the sales were reported "slack" and "wet."

Is it good policy for the orchardists to sell his apples to the shippers and have everything sent abroad to glut the market? One-half the apples packed for No. 2 on many farms the past winter were only fit for the stock or to be ground for cider. Many of these were sold for less than the cost of the barrel, added to the freight charges and

other expenses, and this cheap fruit thrown upon the market injures the sale of the better grades. I think we should take more pains to urge upon the fruit growers the necessity of packing his No. 1 apples only, and have them strictly No. 1 and make some other disposition of his poorer fruit. With the facilities we have in this State for fruit growing we can surely compete with any other section, and we should with our ability to raise high colored, high flavored, firm apples, have a reputation second to none in the world. I believe this ruinous policy of grasping for the whole, in our methods of packing is very short-sighted, and will work great injury to the business in future years.

REPORT OF COMMITTEE ON PRESIDENT'S ADDRESS.

The President's Annual Address was submitted for examination to a committee consisting of Z. A. Gilbert, W. M. Munson and H. W. Brown, who later in the meeting submitted the following :

The committee to whom was submitted the President's annual address for examination and report, having attended to that duty, submit the following report :

In a general way we commend the address to the attention of the fruit growers of the State as well worthy of their confidence.

The suggestion that less attention be given to the further planting out of trees, and instead that we encourage the expenditure of more effort in the care and culture of the trees we now have in hand. We want fruit, and there are but few orchards to be found in the State which are receiving so much of fertilization and of careful and constant attention as its profitable production will pay for. We join with the President in the conclusion that the profits of business call for more of attention to the trees we have rather than more trees planted out.

In regard to protecting our Maine fruits from the damaging effects of association in the market with the inferior fruits with which they go to market. We believe the influence of this Society should be exerted to keep the inferior fruit commonly designated as No. 2, out of the market in their present form. We fully believe if the No. 2 fruit of New England of the last crop could have been out of the market that the good fruit remaining would have realized more money than both qualities have brought as they have been marketed. This inferior fruit can be put into forms of usefulness and of value,

and where it will not drag down the price and choke the demand for the better fruit. We recognize the fact that buyers have a responsibility in this matter and it is only in conjunction with them that any change in this direction can be accomplished.

In the matter of packing we recognize the importance of the subject yet see no way to control or improve present practices so long as the packing is controlled by, and only subject to, the approval of the buyer. Growers seem to do their duty when they conform to the requirements of the buyer. It is more than we should undertake to require to ask or urge that sellers make the quality of the fruit put up better than is asked for. We do not therefore charge off the defective packing wholly to the account of the producer.

Z. A. GILBERT, }
W. M. MUNSON, } *Committee.*
H. W. BROWN, }

OUR LABORS AND OUR REWARDS IN FRUIT CULTURE

By J. W. TRUE, New Gloucester.

While looking over our account of fruit sold the past season, the question presented itself whether our reward was a fair compensation for our labor in raising and preparing it for market, and many were the thoughts that were called up. In the first place our reward for labor should not always be counted in dollars and cents. Those people that have accomplished the most for their fellowmen have not taken their pay in the "Coin of the Realm" but in a more lasting and satisfactory way. The inventor is never satisfied with his invention, no matter how much money it brings him but pushes on making improvements here and there, and the reward in which he takes the most satisfaction is that he has accomplished something new that will give him a name and fame that will live after he has passed away. The *Navigator* will push out for the cold *North* with just the hope that he may be able to discover new lands or get just a little nearer to the *North Pole* than any of his predecessors, if he succeeds it is ample reward for him; he counts money as nothing compared to his victory over the forces of nature with which he has been contending. The fruit grower should have something of that spirit. The forces of nature give us the small natural fruit,

in many cases entirely worthless for family use, and many of the noted varieties can be greatly improved by care and culture.

The first to be done in all cases is to decide that you will make fruit growing profitable and then study up on that subject so that you will thoroughly understand the needs and requirements of the particular branch that you have decided to engage in; if it is the apple, the soil should be well understood, and the kind best adapted to that purpose selected and then fit it thoroughly as for some crop; then when your tree starts you will take pride in it every time your eye beholds it; you feel that your labor is being rewarded with a thrifty tree before there is any indication of fruit to be sold. If possible have all rows straight, especially if in a place that you visit often: if not too expensive I would at least clear all obstructions from the points or places that the trees should occupy in order to make the rows perfectly straight. In our own case we have made every line straight, in some cases requiring the stone tools with powder and quite an amount of team labor to accomplish it. After the stone was out the place would be filled in with soil, and then put in the tree, and now after a number of years we can pick out those trees and admire them as they occupy the space once taken up by a stone. In one case the boulder seemed almost too large and requiring too great an expense to remove, and so the tree was planted about two feet out of line and just as close to the rock as it could be set: it grew well for three or four years; it was in a row that anyone could see from the farm road, and every time apparently that we passed that way we saw it, or if we took our friends that way they would remark "there is one tree out of line," then an explanation would follow. It happened to be a Baldwin tree from a Western nursery, and one spring it failed to put forth its leaves and upon examination was found to be winter-killed, root and branch; then at an expense of about three dollars that stone was removed and a new tree set out, and a portion of the interest is paid on that outlay regularly every time we pass that way.

The trees should be procured from some reliable nursery or perhaps seedlings and then top graft, for if a particular variety is bought, that particular variety is expected to grow. We had a little experience in that line the very first purchase that we ever made—a half dozen pear trees were bought of a tree peddler one of them was to be a President. The tree was well cared for and it grew finely; in a year or two a single pear appeared; it was watched

with a great deal of interest all summer and when with its rosy cheek we thought it was ready to be taken from the tree we gathered it and wrapped it in a woolen cloth, put it into a dark place to ripen. After a few days it was examined and it was decided to be already to test; the family was called together and the pear cut, it was a Clapp's Favorite and perhaps you can imagine its condition, it had a shell and that was all. That "tree peddler" will always be remembered, so that if we expect to make fruit raising profitable either in money or pleasure, we should be very cautious where we get stock for setting.

As to varieties, have quite a number of kinds for home use for it is noticeable that those families that are dependent on the market for a supply of apples usually have but one variety in their fruit dish and it is "Hobson's choice, those or none" while the fruit dish of the farmer's or fruit raiser's family will have a half dozen different varieties and it is a great satisfaction to hear one member of the family say, I prefer this kind, taking a Mother apple; another says, a Spy is good enough for me, and still another, I'll take a Bellflower, and so on, each with a fancy of his own. Such an experience is worth just as much in a family when apples are worth but \$1.00 per barrel as it is when they are quoted at \$5.00 and costs no more. Beyond what is wanted for the family have two or three good commercial varieties, so that if there is a demand for the surplus stock it is worth much more by being all of one or two kinds, as buyers prefer to handle large lots of single varieties rather than small lots of many kinds.

In setting the trees the greatest care is necessary to get the lines straight. So far as the planting goes a tree can be set just as well in five minutes after the hole is dug as to be a half hour doing it, but it takes two to do it and do it well. The first few shovelfuls should be worked around the roots by hand and then when the large roots are covered step right in'o the hole and tread the soil down just as fast as your attendant can shovel it in. In some localities where exposed to bleak winds in two or three years there will be a tendency in some of the trees to lean a little out of line. It is a good way in such cases, just as the frost is out of the ground in the spring to move the trees back into line and brace them up and by the time the growing season is over it will be all right without the brace. In shaping the top and pruning, the habits of growth of the different varieties should be kept in mind that you

may work with and assist nature to produce as nearly a perfect tree of its kind as it is possible to do. Pruning, like weeding, takes care of the small branches and the large ones will take care of themselves.

It will soon become a source of pleasure to look a tree over every time you visit it with your pocket knife in hand, and if necessary take off a little twig here and there, and when the tree gets to be a few years old you will take a genuine satisfaction in reflecting that you have formed that tree just about to suit your ideas of what a tree should be, a satisfaction that would cost lots of solid cash to purchase; it is the same sort of satisfaction that a man gets when he pays \$100,000 for a trotting horse, just as satisfying to the mind of man as many things that are purchased with the cash that the fruit brings. And to make sure that your outlay so far shall pay regular dividends you must give it care and dressing, for a neglected fruit tree will never have a thrifty, tidy appearance. When the orchard comes to bearing if it has been kept in the condition described, it will not be in debt to the man that has cared for it, one cent; he has got his pay as he went along. A person that enjoys such work, as he will after he gets interested in it, could not, in our opinion buy more genuine pleasure in any other way with the money that it has cost. From such an orchard there will be a large proportion of No. 1 fruit that can be readily exchanged for cash and be sure to send an occasional barrel to some poor family. The reward is ample; it will pay in the end; you will have pleasant memories in the decline of life that money cannot buy. So that in looking at the picture in all its bearings, not only with the apple but the pear, plums and small fruits, the rewards for our labors are ample taking health and pleasure at a low cash value. Even if we get but one dollar per barrel I see no cause for discouragement to the one that is thoroughly interested in his work.

There will be many half-hearted ones that will either drop out by the way or fail to give the business that care and attention that success calls for to give a fair remuneration even in dollars and cents.

DISCUSSION.

Prof. Cook of Manchester participated in the talk and took occasion to severely condemn the practice of marketing inferior fruit. Others who took part were Messrs. Gerrish, Wheeler, Warren, Pope, Gilbert, Clifford and Prof. Munson. Several speakers

expressed strong opinions against New York nursery stock, saying that Maine trees skillfully grown were far superior, and suffered far less in transplanting. Others on account of the difficulty of obtaining good Maine trees said it was better to purchase New York trees of reliable nurserymen.

MR. GILBERT. I do not believe in the cultivation of the Flemish Beauty. In quality, when well grown, it is one of our best pears, but in recent years it has cracked so badly as to nearly ruin the fruit.

Prof. MUXSON. It is too bad to lose so good a pear as the Flemish Beauty. There is a belief that spraying for the fungus that causes the cracks will prove an effective remedy. It is worth saving and we hope to do it.

MR. CLIFFORD. Some years ago I was induced by the fine plates to order a few trees of an agent who called upon me. The trees grew well in my garden, and I enjoyed watching them very much. In the course of years they began to bear fruit. The Flemish Beauty is a beautiful tree, it bears an abundance of fruit, but I regret to state to you that the fruit is barely large enough to show the cracks. I hope the wisdom of you fruit growers will teach me what to do with my trees. Mr. John Pike of Cornish raises pears successfully and in years past has brought fine fruit to our market. One of these varieties is the Flemish Beauty. From this it appears that while my fruit is ruined by the scab, he and others are not troubled by it. Whether it is due to his treatment or to the favorable condition of his soil I am unable to say.

OUR EXHIBITIONS.

By D. H. KNOWLTON, Farmington.

Thoreau says, "Every man is entitled to come to cattle show." This idea is so popular that people by the thousands leave the farms and the shops and the desk and hie away to the fair. It is an inexpensive outing where people come together for a little recreation. A prominent man tells us it is no place to gain a person's attention in a business way, for all are "on pleasure bent." We often think in this connection that recreation is made altogether too prominent, that there is a little too much horse trot and too little agriculture. The management of most fairs entertain the idea that there must be sport for the crowd and they seek to secure it by the horse trot. We do not object to a horse trot, but we doubt the wisdom of making it the most prominent feature of the fairs. The writer has noticed that as the horse trot is given prominence other important features are lost sight of and in some instances have entirely disappeared.

It is a pleasure to see a crowd of people at a fair. They are out to see their friends, to shake hands with one another and to enjoy themselves. The outing will do them good no doubt, and they will go home all the better for it.

But whatever may be said of the fairs in other respects the most important features connected with them are competition and education. A generous competition is in itself a source of education. For as a man shows his products by the side of his neighbor's he is able to judge of a rival's qualities. If they are better than his own, he recognizes them and whether he wins the prize or not he goes home a wiser man. In other words he has gained some knowledge that in future years will develop into some power greatly to his advantage.

If there has been an evolution anywhere in the affairs of men it may be found in the modern agricultural fair. Originally the fair in European countries was a place of barter. From this, in America, it has grown into an exhibition combining many attractions, in order to give it popularity and insure a large attendance. We may now say fairs are held for the purpose of (1) traffic, (2) recreation, (3) competition and (4) education. Traffic for a time was nearly lost sight of but now it is among stock growers and breeders an

important feature of our fairs. Without any clamor or display many animals change hands at the fairs, and in this way many people are able to improve their stock.

At the last annual exhibition our Society awarded premiums to the amount of \$562, while the State Agricultural Society, with whom we held the exhibition awarded \$5,530. The smaller sum represents all the fruits and flowers and with a hundred dollars or such a matter from the larger sum, the products of the soil seem to have a very small encouragement. It may be all right for the animal industries to have the major part of the premiums but a question is suggested whether the discrimination may not in the end work an injury to the cause it is intended to benefit most.

But that which concerns us most is our own exhibition and to that I wish now to call your attention. It has been the purpose of the officers, so far as possible, to make it a complete exhibition of Maine fruits and flowers, so that people from other states who visit the fair may have an intelligent idea of the wide range the State has of these products. Further than this there has been an effort to arrange the exhibition so as to make it attractive and pleasant for the visitors. For one, it is my belief that it should be as near a perfect model as possible, but there are so many details connected with it, it is difficult to make the exhibition in this respect what it should be. As illustrative of this, arranging the fruit, *i. e.*, putting it in the place assigned to it, often requires a large amount of work and were it not for the willingness of exhibitors to assist the officers it would be an exceedingly difficult task. For many years it has been a special work of the Society to correct the names of fruit, when wrongly named, and each year there seems to be just about as much confusion of names as ever before. The canned fruits and preserves have been a troublesome class of exhibits to care for, but the last two years the best results have been reached in the history of the Society. These and the fruits likely to be stolen by those disposed to yield to temptations at such times have been exhibited with satisfactory result behind poultry netting. The display has lost nothing and the articles have been safe.

Although we have made special efforts to secure an exhibition of fruit from all parts of the State, no county collections of apples have been shown in recent years from Hancock, Piscataquis, Washington and York counties. It would be a pleasure to see fruit from these counties, as we have the very best reason for supposing good

apples are raised in each county. Of one thing we are certain if we know what they do raise, the Society may be able to be of more service to them than in the past.

A condition of our collective exhibitions is that there shall be not less than *twenty* nor more than *forty* correctly named varieties of apples. While we have had many fine collections of fruit in the past, it seems to me that it might be better to change the numbers, making the less number *fifteen* and the larger *thirty*, but as a further condition requiring that the collection shall consist of standard apples. Possibly it would be a good plan to limit the collections to varieties for which the Society offers premiums for single plates. In this connection I have also thought it might be proper for the Society to offer a premium for collections of fruit not enumerated in our premiums for single plates. The objects of such premiums would be first to show the varieties grown in the State and second to aid in the identification of varieties. The Society in this way can largely extend its influence without encouraging the production of more varieties. Make it a department visitors would examine for names and information. Great care should be taken to have them correctly named. In these times when hundreds of tree agents are selling nursery stock such an exhibition would be of great service, for it may be important to know what not to plant as well as to have the affirmative knowledge.

Last year the Society offered premiums for forty four varieties of apples. Five specimens of each variety were required, except where special premiums were offered, and of these twelve specimens of each were required. The specials were offered for Baldwin, Northern Spy, Gravenstein, Rhode Island Greening, Roxbury Russet, Tompkins King. It would be a grand idea as fast as funds permit to add other varieties of standard fruits to the special list.

As yet we do not believe the perfect apple has been found. There are many Maine seedlings of merit of which little is known, and if the collection of apples (those not named in our list) does not bring them out for exhibition the Society should take further measures to secure this most desirable result. There are several seedlings of Maine origin that have great merit. Among them are the Rolfe, Wealthy (grown from Maine seed), King Sweet, and others we might enumerate. Careful examination of our seedlings may give us an apple of the shipping qualities of the Ben Davis

and the sprightly flavor of the Northern Spy. If such a seedling does not grow in Maine, a little encouragement by our Society might lead to its propagation in the future.

Of the other departments of our exhibition I will only add a few words concerning the flowers. The past few years our agricultural organizations have been urging the passage of laws requiring the study of the natural sciences as related to agriculture in the public schools. Laws have been passed requiring it, and in many parts of the State agriculture is being studied in the schools. In this connection our Society has offered for several years premiums for botanical work upon our Maine flora, the conditions requiring an exhibition of correctly named specimens of dried or cut wild flowers. There have been several good exhibitions, but we are not satisfied with the results, for the competition should be more general. It is possible the premiums should be larger, but our funds will hardly permit of this.

For several years the Massachusetts Horticultural Society has done an excellent work in window gardening. It has given the children in Boston potted plants in the spring with a few cultural directions to aid them in their care. In the autumn the children brought back the plants for exhibition, and to those whose plants were found to be the best cared for, etc., small cash premiums were awarded. The children learned to love and care for the plants, and in many cases the plants cheered the sick with their beautiful flowers and the suffering was much easier to bear. But more than all this the children learned many things about plants and what make them grow. As one result, it is claimed that many homes, otherwise cheerless and forlorn, are adorned with beautiful plants, which are tenderly cared for by the children. More than all this we believe the children are better and happier for the care they bestow upon the plants.

This work is one I have watched with deep interest for I know how much the little folks may learn of the wonderful works of nature, if only a guiding hand may lead them. It is surprising how a little knowledge gained of one plant will teach the child to study others, and step by step as the child develops there come new powers of observation, until the child acquires the habit of observing everything in nature. The plant, the tree, the flower and every living thing leads on the child until there comes the question what makes the plant grow and the flower bloom? Life then becomes

real to the child, and the great source of life naturally becomes the object of love and worship.

We ought never to be quite satisfied with what we are doing, for with each year's experience we ought to be able to do a little more and to do it just a little better. And this suggests whether our Society may not undertake some such work with the children in Lewiston and Auburn. It might be small in the beginning, but this need not deter, for if the means will permit we have only to advance step by step. Should we be the agency through which the children may be led to love the care and study of plants, or should a desolate home be cheered by some floral beauty, our work would be of unmeasured worth. It would be like the leaven of the Scriptures ; yea, it would crown the Society with floral tributes and adorn the hearts of the children with beautiful and loving thoughts of the Great Creator.

God might have bade the earth bring forth

Enough for great and small,

The oak-tree and the cedar-tree,

Without a flower at all.

We might have had enough, enough

For every want of ours,

For luxury, medicine, and toil,

And yet have had no flowers.

Then wherefore, wherefore were they made,

All dyed with rainbow light,

All fashioned with supremest grace

Upspringing day and night ;—

Springing in valleys green and low,

And on the mountains high,

And in the silent wilderness

Where no man passes by ?

Our outward life requires them not,—

Then wherefore had they birth ?—

To minister delight to man,

To beautify the earth ;

To comfort man,—to whisper hope,

Whene'er his faith is dim,

For who so careth for the flowers,

Will care much more for him.

MARY HOWITT.

DISCUSSION.

Mr. POPE. There is great confusion in the nomenclature of our apples. This is sometimes amusing and sometimes annoying. For example the Gravenstein is often confused with the Duchess of Oldenburg, and the name of "Mann Apple" is given to numerous varieties. It would be a help if the Society could do more to correct the names now wrongly given to many fruits in the State.

Prof. MUNSON. There are good seedlings in Maine, and we ought to encourage the growth and originating of new varieties. In this way our fruit is improved. Who knows what the future may bring forth in this direction?

Mr. BRIGGS. The number of varieties is now so large that some extensive growers of fruit are deterred from making collective exhibitions. Twenty varieties—the minimum number—may be too large, and I am not sure but we would have more exhibitions if the number of varieties should be limited from fifteen to thirty, instead of twenty to forty.

Mr. POPE. I doubt whether it would be practicable to make out a list of twenty or more varieties, and require the collective exhibits to be composed of these varieties. The difficulty is to make a list that would be adapted to all parts of the State.

Mr. GILBERT. It has always been the custom of the Society to admit all varieties, thus affording a complete display of good and bad alike. In this way we are able to learn what to preserve and what to discard. It should be remembered that the old varieties are still the best and it will be a long while before we have anything better. It is a vicious practice we are getting of viewing apples solely with reference to their shipping qualities. There must be some other qualities as well as these. Let us give prominence to their qualities.

Mr. POPE. The Society has followed the practice of limiting the premiums so far as possible to the best varieties, and from time to time the premium list has been amended with this in view. Inferior varieties have been struck out and more desirable ones substituted in their place.

Mr. McKEEN. I am very glad this matter of the study of the natural sciences in our common schools has come up here. I have been very much interested in the remarks of Mr. Knowlton and I most certainly wish to endorse and emphasize them. I have for a

long time, looked upon the absence of the study of botany, physiology and their kindred studies from our schools as a matter of regret and more especially, the absence of anything which might enable our young people, the boys and girls of our farms to learn something of the character, the structure and the nature of the plants, the grasses and the trees of our fields and forests. Growing up in the midst of nature's beauties and her grandness, they are as ignorant of them as though they did not exist. "Seeing they do not see, and hearing they do not hear." To this lack of simple study into the hidden processes of nature's work-shop, in which we live, must be laid the general tendency of our boys and girls to leave their farm homes, those homes which must have something of a peculiarly strong and potent character about them, which must have woven into their very centers some subtle force of which the world knows but little, because there is constantly going out from them an ever increasing reinforcement to the ranks of our business men and of those who wield the power of the nation; reaching like the tendrils of the trailing vine into every avenue of our nature, the center being the farm homes of our nation.

In order to increase this feeling and put our business on a level with the other industries of our country it becomes necessary to have the means for obtaining accurate information into the hidden processes of nature, for our young people, in school and workshop. As far as the idea has been pushed, the results have been highly satisfactory. The pupils are ready for this new departure and will grasp eagerly any opportunity that may present itself to learn the mysteries of field and flower.

So I say to the officers of the Pomological Society, and all others who are interested in this noble work, you are on the right track, let nothing turn you from it, you may meet with opposition from even the very classes your efforts tend to aid, but a decided stand and a constant placing before all, the results of your labors will overcome every opposition and you will have the pleasure of scoring, at no distant date, a complete success, and of seeing the teaching of the simple, natural sciences a part of the course in every school in our State.

OUR CHOSEN FAMILY.

By WILLIS A. LUCE, South Union.

What a number of pictures does memory present to us when we bring before the mind the word family. Instinctively we turn toward our own home and see father, mother, brothers, sisters, as we recall them in the earlier associations of life. Then we note other families familiar to us by ties of friendship, and it has been a pleasing pastime to study the characteristics of these several families and the circumstances under which they were developed. We might select from the prominent families of history one for our chosen family, whose virtues we might strive to imitate as the family of Abraham, but that would not fulfil the purpose of this paper however interesting and profitable such study might be.

The word family has quite a general signification throughout nature and natural objects. Thus we speak of certain noted animals as belonging to such a family; having characteristics intensified by careful breeding whether it be for butter, beef, strength or speed. It also embraces language. And we often mention a group of similar character as forming a family. Thus we have in the aggregate of our State a family of counties. This meeting then in some respects might properly be called a family reunion by representatives, as York county is the parent of all the counties of our noble State, embracing as it did prior to 1760 the whole area of Maine. It is not unlikely that our efficient secretary in arranging for this meeting, thought we ought to visit our parent in the interest of pomology and agriculture and see how she is prospering.

I sincerely hope it may be a rallying point in the interest of those subjects we have to present that we may be of mutual benefit to one another. To one who loves the State of Maine, this family of counties in which our homes are embraced would present to look into its history and development an inexhaustible source for thought. But whatever choice others may have of family and family ties that of the Maine State Pomological Society culminates in the Rose Family. This group is coeval with man and honorable mention was made of a member 3,000 years ago in these words: "As the apple-tree among the trees of the wood so is my beloved among the sons. I sat me down under his shadow with great delight and his fruit was sweet to my taste." (Song of Solomon, 2:3.) And I doubt not if we could

have been permitted to see that wondrous garden of Eden we should have found our chosen family the largest in all that glorious domain. It seems somewhat singular that nearly all the important fruits of the temperate region should be embraced in this one group but it is true. We have a royal family indeed that would suit the fastidious taste of even Dr. Holmes.

The "Rose Family" then is the chosen one of this Society and it is that we may understand the characteristics and laws that govern the growth of its members (the apple, pear, plum and cherry, also the more lowly members, the strawberry, raspberry, blackberry and rose that gives the family its name) that so much thought and investigation is put forth. We see in these fruits which in our latitude cover the entire season the hand of an all-wise Creator, and the more we cultivate and study these choice gems of nature, the more do our hearts flow out in gratitude and love to the great "giver of every good and perfect gift."

While I am interested in, and grow to a greater or less extent, all the members of this family I have mentioned, what thoughts I present at this time will be upon the growth of those very humble ones known as small fruits and the rose. At nearly every meeting of this Society some prominent fruit grower of New England (as Mr. Augur and Hale of Connecticut and Dawes of our own State) has given a most excellent exposition of this subject. These men have had long experience, and those who have studied the reports of the Society have found valuable information in all these papers.

Allow me, Mr. President, to diverge a moment and speak of reports. What observation I have had would lead me to think that the reports of our societies are not valued as they should be. One often comes across them in out-of-the-way places, in heaps of rubbish, etc., and when opened they will snap with glad surprise, showing that they have never been opened before since they left the printers' hands. They must be studied in order to be of benefit to the farmers and fruit growers of Maine. Let us study then what mature minds with large experience give us through the reports.

But some one may raise the question why waste this valuable time on so insignificant a subject as small fruits. Surely no fruit is insignificant that can be raised, comparatively speaking, from the equator to the poles. I wrote Mr. Van Deman for statistics as to the value of the small fruit crop in this country for 1890, but I could not get them as they are not yet completed. We feel it our

duty to keep this subject before you until every family in the State is fully supplied. The health of the people demand it. Listen to one of America's greatest pomologists, Marshall P. Wilder, on this point:

"Think once more, my friends, of the great blessings which you may confer on mankind by the multiplication of good fruits. Next to saving the soul is the saving of health, and I know of no better means than an abundant supply of ripe fruits. Fruits are the overflow of nature's bounty; gems from the skies which are dropped down to beautify the earth, charm the sight, gratify the taste, and minister to the enjoyment of life, and the more we realize this, the more shall we appreciate the Divine goodness to us, and the duty of providing them for others."

This duty the fruit growers of Maine met when in the year 1873 they organized the Maine State Pomological Society. Grand work have they done in promoting the growth of fruits in our State and showing the importance of the industry.

First among the small fruits or berries comes the strawberry both in season and demand, but before taking up its cultivation, as ours is a botanical family, we will look into the botany to a certain extent of the strawberry and other small fruits, as given by Gray. Its botanical name is *Fragaria* (named from the fragrance of its fruit). When we speak of fruit we mean the ripened ovary with its contents. Some fruits as they are commonly called are not fruits at all in the strict botanical sense. A strawberry, although one of the choicest of fruits in the common acceptation, is only an enlarged and pulpy receptacle, bearing the real fruits (that is the ripened pistils) scattered over its surface and too small to be much noticed. This small, dry achene is plainly a ripened ovary showing the remains of its style or stigma or the place from which it has fallen.

In the raspberry and blackberry each grain is a similar pistil in the flower, but unlike the pistil in the strawberry it ripens into a miniature stone fruit or *drupe*.

So in the strawberry we eat the receptacle or end of the flower stalk, in the raspberry a cluster of stone fruits, like cherries on a very small scale, and in the blackberry, both a juicy receptacle and a cluster of stone fruits covering it. We see again the wisdom of our Creator in the succession of fruits coming through the entire season.

CULTIVATION OF THE STRAWBERRY.

The light, sandy or gravelly soils are the least desirable, and the alluvial soils or those containing a larger percentage of vegetable mould the best. It ought to be worked two years to completely rot the sod, remove the white grub, and check the weeds.

To furnish an abundant supply of plant food, apply from twenty to forty cords of good manure to the acre, and plow in ten inches deep. This after being thoroughly cultivated and smoothed will give you a grand feeding ground for the strawberry. You may think this amount of manure excessive and that the strawberry is a rank feeder. It is not exhaustive to the soil but when we cover one season with growth and without added fertility get a crop of berries the next, you see plainly that there must be, to secure good results, a large amount of plant food in the soil. Again this plant does a large amount of work in a very short time. We uncover the plants about the first of May and begin picking the last of June. Doing so much in so short time, putting forth the buds, blossoming, developing the fruit, ripening, all within about ten weeks, calls for an available and full supply of food.

VARIETIES.

There are a host of possibilities and often anticipated results in this one word that we never realize. There are failures here the same as in every other enterprise. Talk about varieties running out; they can't help it the way some people handle them. Give them a herd of Jerseys that would average twenty pounds of butter a week and they would run out in the same way. Improper care and an utter disregard of the laws that govern production. People often come to me asking for plants from an old bed. I tell them they can have all they want but they are good for nothing. It is better to pay a dollar a hundred for good plants than get these old ones for nothing.

We want strong, vigorous stock to start with and then put all our powers at work to strengthen the good points, by selecting those nearest our ideal to propagate from. By this method a variety instead of running out may be wonderfully improved. For general cultivation I have never fruited a kind that would compare with Crescent in vigor of plant and yield of fruit. I have found a hermaphrodite sort at last, (Michel's Early) that is its equal in vigor

of growth and from experiment station reports. should judge it to be a good companion for the Crescent in field culture, as it blossoms at the same time and produces a great amount of pollen. As a rule the hermaphrodite varieties are not so productive as the pistillates. I have known many failures among farmers in fruiting a fine bed of plants simply because they were a pistillate sort and no perfect flowering variety near. So after repeated failure they became discouraged. Several such instances have come to my notice the past year.

This is a point in the botany of flowers that farmers especially need to know, for many failures in crops may be traced directly to it.

LIST OF VARIETIES.

Hermaphrodite—Wilson, Sharpless, Jesse, Downing, Michel's Early, Gandy, Parker Earle, Bidwell, Belmont, May King, and Miner's Prolific.

Pistillate—Crescent, Bubach, Warfield, Farnsworth, Eureka, Manchester, and Middlefield.

DESCRIPTION OF VARIETIES.

Bubach: Makes runners slowly, but sets strong stocky plants. Fruit deep scarlet, average large. A very promising variety but rather soft for long shipment. Season late.

Wilson, Downing, Miner's and Manchester with me are more subject to leaf blight than any others. This weakens the plant so they do not mature a full crop and the fruit is dry and inferior. Some seasons when they are not affected they give a good crop of fine fruit especially the Wilson. Its firmness makes it a very superior berry for canning.

Sharpless: This is one of the strong-growing healthy sorts and with me takes the lead in size of fruit. It is inclined to green tips some seasons but not always. For best results it needs a deep, rich soil and plants not too thickly set.

Jesse: A seedling from Sharpless. It resembles its parent in growth and size of fruit. It also needs a rich soil and then is only moderately productive. But the fruit is superb in color, size and quality. Very healthy.

Eureka: This is a vigorous growing plant, not very stocky. Makes runners freely. Fruit bright red color and attractive. The past season it was troubled with leaf blight to some extent.

Warfield and Farnsworth: Vigorous growers. Strong, healthy plants.

Parker Earle and Michel's Early: Very promising.

Crescent: This variety is more extensively grown than any other, particularly in the North. It is early, hardy and productive. Fruit with me good both in size and quality. I always take it as a standard for judging other varieties. There are others better in quality, but they lack in some essential point, vigor, productiveness or are troubled with leaf blight. I always advise those who never have raised strawberries to start with Crescent and some good fertilizer. If a large berry is desired, use Sharpless or Jesse. If not, I think Michel's Early would give best results.

After the question of varieties is settled and you receive the plants get them into natural conditions as soon as possible. Do not leave them standing in water, but untie the bunches, moisten the roots and if your ground is not ready, heel them in somewhere protecting from sun. Wherever your fruit garden is arrange it so as to cultivate by horse power. In preparing the ground have the surface raked smooth or some plants will be set too high and others too low. In either case they would not grow well for the cultivator will either smother them or they will dry out.

Be sure to have the rows straight so the cultivator may be run close to the plants. To secure this either set by line or sight the rows through by stakes and run some heavy truck by the stakes to mark the row. For matted row system of growing have the rows three and one-half or four feet apart, plants from twelve to twenty inches in the row owing to vigor of growth. Mr. Augur in a paper read before the Massachusetts Horticultural Society, February 14, 1891, recommended the triple row system setting in rows three feet apart and one and one-half feet in the row, allowing each spring set plant to throw one strong runner on each side, rooting a single plant opposite the intervening spaces. In setting be sure and press the soil firmly about the roots, to insure a quick start. Soon as the buds appear cut them out, and let the plant get well established in its new quarters before letting the runners grow. After the runners get started spread them out over the surface as evenly as possible as the cultivator tends to bunch them. After the ground is frozen cover so as to just hide the plants between the rows, as well as over the plants, with some seedless material, clean straw, meadow hay or boughs. I like straw or hay best as it is much less

labor and can be raked between the rows in the spring, checking the weeds and keeping the ground moist. This covering is not to protect from the cold, but the alternate freezing and thawing that injures the tender rootlets near the surface which are to do the work when spring opens.

PROFIT IN STRAWBERRIES.

I believe there is money to be made in fruit-growing and especially in strawberries. They do not require a heavy outlay of money and give quick returns on labor and capital, desirable features in any business. I have no very remarkable reports of my own experience for the best that I have done on anything of a large scale is at the rate of 175 bushel crates to the acre or 125 bushels on three-fourths of an acre. This with about the same amount of dressing I would use for a crop of corn. If I had had the manure I should have used the amount I mentioned in this paper. Probably we put about twice the work on the piece that we should, had it been planted to corn. I sell my berries at the farm at an average of \$3.50 a crate, giving \$612.50 value of the berries at the farm for an acre. This looks like small business beside Mr. Augur of Connecticut and Barnard of Massachusetts, who get from four to five hundred bushels to the acre. Taking the medium, 450 bushels at twenty cents a basket, which I understand Mr. Barnard gets under contract and what does it give? Fourteen thousand four hundred baskets at twenty cents gives \$2,880 for the product of one acre. Do not think these results are accomplished by any haphazard work. It is science applied to fruit growing. The best I have ever done was to get twenty bushel crates from nine square rods. This would be 355 bushels to the acre. I thought this a remarkable yield, and it was for Crescent and Sharpless under matted row system. For this is considered the poorest method for great results, yet the most convenient because of less work.

RASPBERRIES.

Next in succession comes the raspberry. This is a very easy fruit to raise. It does best in lighter soils than strawberry. Prepare the ground about the same and set plants three by six feet for matted row, six by six for hill culture. The roots of this plant run quite near the surface and after the plantation is well started give a liberal manuring and mulch heavy enough to choke weeds. This

retains moisture for the roots and keeps the soil light. The principal work after this is to choke back the canes which are apt to increase too rapidly.

VARIETIES.

Marlboro: For early this is the leading variety. Beautiful crimson color; hardy; not very firm; good for home use and home market.

Cuthbert: Leading market berry. Rather a late variety. Marlboro nearly through fruiting when this begins to ripen. Dull purplish color. Quite firm, fine flavor. Hardy.

Golden Queen: This is a very vigorous, hardy variety. In season about the same as Cuthbert. Remains in fruit a long time, which is a beautiful golden color; fine quality.

Shaffer's Colossal: Not hardy with us but when uninjured is very desirable.

Gregg: Black caps are not popular in my section so this is the only variety I have. They are really a fine fruit and very easily grown.

BLACKBERRIES.

Cultivation same as raspberries. Set plants 4x8 or 6x8 feet.

VARIETIES.

Snyder: One of the standard market sorts for the north. Hardy, fair quality, very productive. I have also the Agawam and Erie which are fine fruits. Forty and fifty bushels of raspberries and blackberries is considered a good yield per acre.

A man working a large farm has no business with small fruit growing beyond the full needs of his family. The strawberry and hay crop come together, and other fruits follow in quick succession. Neglect is bad for the hay, but when you neglect berries it means total loss. I believe in making a specialty of one and putting your whole heart in it. But every one who has land ought to raise small fruits for the family.

Specific list of fruits for family:

Strawberries,	{ 50 Crescent,	.60
	{ 50 Sharpless,	.20
Raspberries,	{ 50 Marlboro,	.70
	{ 25 Golden Queen,	.50
Blackberry,	50 Snyder,	1.00
Gooseberry,	6 Houghton,	1.00
Currant,	6 Cherry,	1.00 - 5.00

This may seem a small quantity of plants but with good cultivation they will yield a large amount of fruit.

THE ROSE.

President, Prince, Duchess, General, Baron, Duke, Earle, noted men and women of every age are represented in this branch of our chosen family even to our beloved Washington and the family "Belle."

QUEEN OF FLOWERS.

Delight of childhood, joy of middle life, solace of age. They minister to a thousand pleasing fancies. Not only do they crown the joy of the bride but as we send them to sick and afflicted they bear messages of love and sympathy. They also revive the heart by their beauty and fragrance. And when called to tender our last sad ministrings to departed friends in no way can we express our feelings so well as by these beautiful emblems of love and purity.

The cultivation of this plant has received a large share of attention the past decade and as a result some very choice new varieties. The climbers, Hybrid perpetual, and Moss are the most desirable for Maine, being hardy and embracing all the colors except yellow. This is found in the Persian Yellow which is a very beautiful rose.

Roses can be grown with little care; every one who wishes can have them. They ever respond in buds and flowers in proportion to the care we give them. The soil needs to be very rich. In making a rose bed, remove the soil the size you desire to the depth of two feet. Fill in one foot well rotted cow manure then a mixture of manure and rotted sod in which set the roses having them slightly lower than the surrounding surface that the moisture may not run off but sink about the roots. Most people set them too high. They need to be put well into the ground. Some of the best varieties.

Climbers	{	Baltimore Belle.
	{	Gem of the Prairie.
For lawn	{	Marshall P. Wilder, Gen. Jacqueminot.
	{	Paul Neyron, Crested Moss.
	{	Baron De Rothschild, Mdme. Plantier, Persian Yellow.

The Polyantha or fairy roses are very beautiful, sweet and hardy. One other member of this family I must mention,

THE SPIREA.

A more beautiful hardy shrub it is hard to find. A real delight are its masses of white flowers. The most desirable is the *Spirea Van Houtii*.

It is stated that but one-third of the working class can profitably be engaged in agricultural pursuits. If this is the case many of the sons and daughters of the farmers of Maine will find some other vocation. If they must go how different will be the feelings of those reared among the refining influences of fruits and flowers, from those who have occupied some of these dreary country homes we often see. The first as they reflect upon their early life are filled with joyful recollections and with sadness do they leave the associations of childhood. The others are only too glad to escape from the disagreeable surroundings and work. Let us then surround our homes with the beauties of nature, fruits and flowers, so lovingly bestowed upon us that our sons and daughters may look back upon a childhood filled with happy memories.

DISCUSSION.

PROF. MUNSON. The influence of the pollen is a matter of special interest and importance to the strawberry grower. An increase of pollen tends to increase the size of the fruit. This is thought to be the explanation of the wonderful productiveness of the Crescent Seedling when properly pollenized. There is much yet to be learned of the influence of the pollen upon the pistillate varieties. Of one thing we are quite sure and that is the necessity of having some perfect flowered variety growing near them. Size, quality and quantity are wonderfully increased in this way.

PEAR CULTURE.

By H. S. DAWES, Harrison.

I am aware that my subject is a dry one to most people, from the fact that so few in our State are interested and engaged in the cultivation of pears. I am also aware that the object of this meeting and Society is to interest, and extend its usefulness to those not engaged in the profitable and delightful occupation of fruit growing. I regret my inability to present the subject to you in its true merits, and to bring out anything new or interesting, for I find myself in the condition something as the good old lady was when engaged in making her soap, and one of her neighbors called in and asked her how she did it, replied that she could not tell how she made it, but it come by observation, and all I can tell you about pear culture is what I have observed and learned since I have been in the business. Give me a moist, thoroughly under-drained soil. I don't care whether it is clay, loam, gravelly or sandy, located on a fair elevation, and you can raise pears just as well here in Maine as you can anywhere in New England.

If you wish to engage in the business, I should select an acre, more or less, according to your circumstances, of such soil and location as I have described, and prepare it as follows: I should plow it as deep as you can, by going twice in the same furrow, and turn under a heavy coat of dressing. After you get it plowed, spread on another good coat of well decomposed barnyard manure, to make it rich enough to bear good corn without any fertilizer in the hill, and plant it to corn or potatoes the first season. After the crop is harvested in the fall, plow in another coat of barnyard dressing, also plow again the following spring, and if you give it another coat it won't hurt it. Harrow it over five or six times after each plowing, and cart off the rocks and other debris. It is no small job to prepare an acre suitable to grow pears, especially if the soil is rocky, but it does not pay to half do it. After you have given your ground the finishing touch with the smoothing harrow, it is all ready to lay out, and how shall it be done? That depends on the kind of trees you intend to plant. If you feel an interest in your posterity, and wish to benefit your heirs, I should set standard trees, twenty feet apart each way. But if you want to get the fruits of your own

labor, and the largest possible profit from your acre, I should set dwarfs, ten feet apart each way. When I first commenced in the business, twenty-six years ago, I did not like the sound of dwarf trees, and looked on them as a curiosity that would do to set out in the flower garden. Accordingly, I set two on the edge as a novelty. One of them was a Duchess, and is a good, healthy bearing tree; the other was a Louise Bonne de Jersey, which bore itself to death, and died last year for the want of proper treatment. When they came into bearing, which they did after the third year, and I saw that there was nothing dwarf about the fruit, I began to change my mind, and did not care what they called the tree as long as it bore the largest fruit, the most of it, and almost invariably took the first premiums. My experience with those two trees, and about one hundred and fifty more, set ten years later, as compared with about the same number of standards, (as I have about an equal number of each,) has convinced me that you can get five times as much profit from an acre of dwarfs as you can from an acre of standards. I am so selfish that I want the benefit of my labor while I live, and don't care to invest, or recommend others to, in anything that does not promise quick returns and good profits. As a consequence, I have never invested in life insurance, and shall put no more money into standard pear trees.

After you have decided which kinds you will set, provide yourself with as many small stakes as you have trees to plant, and lay out your grounds. Drive your stakes just where you want each tree to stand when set, and be sure and have your rows straight, and the trees of equal distance each way. Dig the holes six inches deeper than you want the tree to set, and put the top soil in a pile by the edge of the hole, the bottom soil close to it, and have the diameter of the holes three and one-half to four feet. Be sure and replace the stakes, and keep them in line both ways. Provide leaf mold enough to apply half a wheelbarrow load to each tree, and dump it close to the edge of the hole, also five large shovels full of thoroughly decomposed barnyard manure, and put that beside the leaf mold. Having previously provided good, healthy trees, prepare them by pruning and cutting them back as they should be. Cut off all the bruised ends of the roots, take a wheelbarrow load of ashes, a bucket of water, a round stick two feet long, one and one-half inches in diameter, made on purpose to tamp the dirt around the roots, one

man with hoe and shovel to set your trees. Fill up your hole with your best top soil and leaf mold, till you get it high enough so that your tree will stand just as you want it. Now remove the stake and set the tree in the same spot, taking care to keep it in line with the stakes. Commence to set your tree with your best soil and leaf mold, tamp it firmly around the roots, taking care to keep them in their natural position. When you have the tree two-thirds set, pour on a dipper of water and let it settle around the roots; fill up the hole with alternate layers of soil, leaf mold and manure, taking care not to have the manure come in contact with the roots, but leave it mostly on the outside edge of the hole for the future use of the tree in years to come. Spread on about two quarts of ashes near the surface when the tree is nearly set. Scrape all the remaining soil, leaf mold and manure in a circle around the tree, treading it down firmly with your feet, and smooth it all off with a garden rake.

It costs something in money and labor to plant out a pear orchard as it should be. But do your work thorough, and you will have an orchard that you will feel proud of when it is done. The main object to keep in mind in setting out fruit trees of all kinds is to imitate nature, and provide the trees with such fertilizers as will make the soil as near the virgin state as possible, so as to stimulate them to a healthy as well as a vigorous growth. I know of no better way to do this than by making a liberal use of leaf mold, decomposed barnyard manure, and a few ashes when planting the trees. There is nothing equal to leaf mold for a mulch, and there is no danger of using too much of it.

When you procure your trees make a contract with some responsible nurseryman, or party, for just the kind of trees you want; specify the different varieties, all to be true to name, of the best, clean, healthy stock, and hold him to his agreement, or make him pay damages. You can get standards for fifty cents each, and dwarfs for twenty-five cents, and perhaps less and get good trees. Don't buy them of a tree peddler under any circumstances, for you will be just as likely to get one-half of them crab apple trees, and the other half you will not know any more about than you do of Blaine's health, or whether he is going to be a candidate or not, by reading the papers.

You will observe that it takes just 110 standard trees, set twenty feet apart each way, to plant an acre, which will cost, at fifty cents

each, \$55, and if you set dwarfs, ten feet apart each way, it will take 430 trees to plant an acre, just three dwarfs to one standard, and they will cost, at twenty-five cents each, about \$108, making the cost if you set dwarfs, about \$53 more for the trees than it will to plant it with standards; add to this \$100 for fertilizers, labor, &c., will make your orchard, if you set dwarfs, cost you about \$208, and if you plant standards it will cost about \$150, and that amount, if you have any taste and gumption at all, will do it in first-class shape, and you will get good pay for your labor and fertilizers, and you will have an orchard, if you take care of it as it should be, that will prove to be a good investment and a source of pleasure and enjoyment.

With your orchard all set, the bulk of the labor and expense is over as it requires but very little labor and expense to keep it in order. The trees need but very little pruning except to keep the leading shoots cut back, so as to make the tree stocky with a symmetrical head. Keep the ground entirely clean of weeds, which is easily done, for you can cultivate both ways. Give them a good annual manuring round the trees after the third year, and for the first three years you can plant one row of beans or potatoes between each row of trees. After that they will commence to bear, and you should give them the benefit of the whole surface.

In regard to varieties much can be said, for their number is legion. But I shall only notice a few of the old, tried sorts that we know are good and pay the best, that do as well on the quince root as dwarfs, and let each individual experiment and test for himself as many kinds as he pleases. There are lots of pleasure and enjoyment in doing that, but more pleasure than money.

For a summer pear there has nothing yet been brought out that is equal to the Bartlett, all things considered, either for a standard or dwarf. It is an early and abundant bearer, yields good crops annually, and there is more money in it for me than there is in any other summer variety, and I should set one-fourth of an orchard to this sort.

For a fall pear I think, all things considered, there is more money in the Louise Bonne de Jersey than in any other. It is an annual bearer, does it best as a dwarf, and is one of the best selling pears in the market. Its worst fault is its tendency to overbear, and the fruit must be thinned to save the trees and have the fruit mature to perfection. The trees are more subject to blight than most others,

but with all its faults I should set fully one-half of my orchard with this sort. Next comes the Duchess d' Angouleme, which is one of the best if not the best, to cultivate as a dwarf. It is a good annual bearer, the tree remarkably free from disease, the fruit needs but little thinning, is of the largest size, sells well in the market, and when fully matured and ripened is of first quality. Its worst fault is that in some seasons, and under certain conditions that I cannot explain, it does not mature and ripen all of its fruit fully, and then there is little to choose between one and a turnip. You will notice that I have limited you to three varieties, for my object has been for profit rather than pleasure, and if you have that in view I don't think you will regret it.

I will now give you a little of my experience with insects and diseases. In regard to insects I can tell you but little, for I am no entomologist. I have never taken much interest in their origin and life history. I cannot tell you much about microbes, bacteria, trypetas, etc., for I never went a gunning for such small game, and if you wish to know more concerning them, I will refer you to Prof. Harvey and some of those experts at Orono, who will furnish you with all the scientific and reliable information you desire. I read in the papers not long since, how many thousand microbes there are under a person's finger nails, and my daughter thought, if that was so, that mine must be badly infested. I have directed my efforts more to find out some remedy to get rid of them, rather than to spend time looking through a compound microscope to study their genealogy and habits. My pear trees have never been troubled much with insects, except the codling moths, and you can easily handle them by spraying judiciously with Paris green. But the disease called the blight, or sun scald (some say that it is an insect); has been a serious one, and I have lost quite a number of trees by it. I have tried all the remedies that I could hear of, and made all sorts of applications, all to no effect, and I became thoroughly disgusted, and concluded that they amounted to nothing, or I wasn't much of a doctor. For a while I tried to console myself with the thought that it is an irrevocable decree of our Creator, that, in His appointed time, all men, animals, vegetation, and even the world itself shall perish, and that I ought not to expect that a dwarf pear tree would be an exception. But I found that something must be done, or I should lose all my trees before their appointed time came. So, on further reflection, I thought I would try once more, on my

own hook, and go it blind. I went on the principle that an ounce of preventive is worth a pound of cure.

I had previously observed that by slitting the bark from the main limbs down to the ground, the new bark that formed was very smooth and healthy, and it seemed to open a new vein of life, so to speak, in the tree. I also recollect that when I was a boy and attended the town school, my mother used to have me wear a small bag of sulphur as a preventive to certain contagious diseases that were prevalent in the district, and the thought occurred to me that something might be done to prevent a healthy tree from being attacked with the fatal disease. So I adopted what I call the Chinese remedy. I have heard it said that in China they only pay the doctor as long as he keeps you well, and when you become sick his pay stops, and if you are very sick he loses his head; and if your tree is badly affected you will lose its head and feet both, and the sooner you dig it up and burn it, the better. My preventive consists in slitting the bark, and common white wash with ten pounds of sulphur thoroughly mixed with fifty gallons of the wash, and applied to the trees in the spring when the buds are swelling. I first have my man go along and slit the bark from the main limbs down to the ground. I then follow with a large pail of the wash, with a Lewis pump attached to the bottom, and spray the top of the tree. Another man follows with the wash and applies it with a brush to the main limbs and the trunk, so that the tree is completely whitewashed from top to bottom. It wants to be applied in the spring, before the tree leaves out. It does not injure the buds or the tender foliage in the least. I made my first application three years ago last spring, and have not seen the least symptom of the disease on a single tree that was treated. I also applied it to two trees that were affected so badly that I had to cut off one-half of the branches, and they have fully recovered. I wish to be distinctly understood that I only recommend it as a preventive applied to healthy trees every spring, in connection with the slitting of the bark, and not as a remedy. There may have been other conditions why the trees have not been affected, that I do not understand, and I do not recommend it as a sure preventive, but simply give you the result of my experiment, for what it is worth. But my faith in it is so strong that I am willing to risk my reputation as to its success, provided you don't let the trees overbear, and it is applied every spring, and the trees are properly fed and cared for. If a tree overbears two or three crops it will die, and I don't believe

all the doctors in the world can apply any remedy that will save it. There is nothing that you can do to your trees that pays so well, and gives so good results, as thinning the fruit, especially those sorts that are inclined to overbear, like the Louise Bonne de Jersey, Bartlett, and some others.

Pears, like individuals, all need about the same soil and cultivation, but their quality depends almost entirely on the manner they are treated and handled. I think sometimes that a man that is not a good judge of human nature, cannot succeed in cultivating them, so varied are their habits and the modes of handling them. The first specimens of fruit grown on young trees of some sorts, are as good, if not better, than they are after the trees get older. Others, you cannot tell anything about the quality of the fruit by the specimens first grown, and the fruit only arrives to perfection as the tree matures. Almost all of the summer and fall pears want to be picked while they are hard and green, and ripened in a warm, dark place in masses. A parrel of pears headed up tight, will ripen up and be of much finer flavor than they will to be turned down loose on the floor and exposed to the air. The winter sorts want to hang on the trees as long as it is safe to let them without freezing; if they are picked before they are fully ripe they shrivel and lack flavor. I took a half bushel of Duchess, Louise Bonne de Jersey and Sheldon, last season to experiment with in ripening. I put part in the cellar, the rest in the attic, except a few that my wife put in the parlor. When we thought they were about right, we began to test them to see which were the best. We both agreed that those in the cellar were inferior every way to those in the attic, and I will say to all, don't put summer and autumn pears in the cellar to ripen. I could not see much difference between those in the parlor and attic, but my wife, whose taste is more acute than mine, insisted that those in the parlor were the better. I knew well that it was no use to argue the case, and I was glad to learn that she had found some practical use for such a needless and expensive luxury.

Somehow or other, the most of our farmers and pomologists have got the idea that they cannot raise pears here in Maine successfully as they do in Massachusetts, and so they don't try, and when I come to look around and see how few there are engaged in the business, and the way they do it, I don't wonder they think so. I believe there is something in the location and soil but vastly more in the treatment. I can raise pears almost as cheap as I can apples, and so far my

pears have paid me a better profit than apples, and they would have paid far better if they had all been dwarf trees of the right sorts. All we lack is skilled labor, and those that have a taste for the business, to give our State as good a reputation for its pears as we now have for our apples.

A man whose taste is all horse, and spends half of his time in the stores and on the street corners talking about him, will not succeed in cultivating them in Maine, or anywhere else. The horse is a noble animal, and merits a high position in our industrial pursuits, but is it not a question worthy of the consideration of those who have the matter in charge, whether they are not giving him vastly more than he merits, to the expense and neglect of our other industries, considering all the demoralizing influences there are in connection with it? But this is no time and place to discuss the horse question. I have already wearied your patience too long. In conclusion, will say that I feel altogether out of place in trying to write and read papers before these professors, and this intelligent audience, for I was trained and educated to use the hoe, and not a pen. I trust that when our honorable secretary makes up his programme another year, he will employ an expert at the business, and not one who has to go to the dictionary as often as I do.

EXPERIMENTS IN SPRAYING.

By Prof. W. M. MUNSON, State College, Orono.

The number of the insect and fungous enemies of the fruit grower, and the magnitude of the damage caused by their attacks are sufficient reasons for considering certain methods of treatment at this time. While there are fluctuations in the severity of attack, it is patent to all that something must be done, or Maine will lose the proud position she holds as one of the finest apple states in the Union.

In Massachusetts, New York, and farther west, orchardists are fully alive to the importance of combatting these pests, and the practice of spraying with fungicides and insecticides is common. It is not to be supposed that conditions of soil or climate would render the work done in other parts of the country of no value as suggesting the proper course to pursue in our own State, but it has been

thought best to prove for ourselves the effectiveness of the remedies, —if they are effective.

Unfortunately there are no large orchards in the vicinity of the college, hence we have labored somewhat at a disadvantage. Much credit is due to the gentlemen who gave the use of their orchards and so faithfully assisted in the work. I shall give as concisely as possible the results of the past season's work in the line of "experiments in spraying."

CODLING MOTH (*Carpocapsa Pomonella*).

A pest which is universal in the southern portion of the State, and one which in many sections is the most serious we have to meet, is the larva of the codling moth. I say in the southern part of the State, for I am informed by growers in northern Aroostook that this pest has not yet reached them. No doubt all are familiar with the larva as it appears in the fruit. The moth itself is small, and very delicate. As it seldom flies during the day, it is not often seen unless one is searching for it.

IS SPRAYING WITH PARIS GREEN A PREVENTIVE?

To answer this question, trees were sprayed in the orchards of Messrs. W. P. Atherton of Hallowell, Charles S. Pope of Manchester, and F. M. Woodward of Winthrop.

In Mr. Atherton's orchard a row of Rhode Island Greenings, and a row of Hubbardston Nonsuch were selected. Four of the Greening trees were sprayed with Paris green in the proportion of 1 pound to 250 gallons of water; an equal number in the proportion of 1 pound to 300 gallons, and three trees were left unsprayed.

Of the Hubbardston, one tree was sprayed with the mixture of 1 pound to 250 gallons, two in the proportion of 1 pound to 300 gallons, and two were left unsprayed.

Two applications were made. The first one, June 11th, just as the last blossoms were falling was under my own supervision. A second application was made by Mr. Atherton two weeks later.

The fruit was gathered October 3d. With the help at command we were unable to gather the fruit from all of the trees. Therefore in case of the Greenings, two trees of each lot were taken, reference being given to the relative size and productiveness of the tree so far as possible. All of the fruit was picked from the trees, and all that had dropped was gathered separately.

Table 1 indicates the comparative results.

TABLE I. A. RHODE ISLAND GREENING.


Treatment.	Whole number of fruits.	Number wormy.	Per cent wormy.	Average per cent wormy.
A. R. I. GREENING.				
ONE POUND TO 250 GALLONS.				
<i>First Tree.</i>				
Picked	453	39		
Fallen	67	18		
Total	520	57	10.96	
<i>Second Tree.</i>				
Picked	727	25	-	7.14
Fallen	98	14		
Total	825	39	4.72	
ONE POUND TO 300 GALLONS.				
<i>First Tree.</i>				
Picked	1069	101		
Fallen	165	53		
Total	1234	154	12.48	
<i>Second Tree.</i>				
Picked	1100	47	-	10.08
Fallen	145	49		
Total	1245	96	7.71	
NOT SPRAYED.				
<i>First Tree.</i>				
Picked	1195	124		
Fallen	228	114		
Total	1423	238	16.02	
<i>Second Tree.</i>				
Picked	556	73	-	20.11
Fallen	253	138		
Total	809	211	26.08	


TABLE I. B. HUBBARDSTON.

Treatment.	Whole number of fruits.	Number wormy.	Per cent wormy.	Average per cent wormy.
ONE POUND TO 250 GALLONS.				
Picked.....	773	13		
Fallen	36	28		
Total	809	41	5.06	5.06
ONE POUND TO 300 GALLONS.				
<i>First Tree.</i>				
Picked.....	681	11		
Fallen	33	22		
Total	714	33	4.62	
<i>Second tree.</i>				
Picked.....	836	75	-	10.04
Fallen ..	83	56		
Total	919	131	14.25	
NOT SPRAYED.				
Picked	652	145		
Fallen ..	169	122		
Total	821	267	32.52	32.52

It will be observed that none of the trees were very seriously attacked. The unsprayed trees having an average of but about twenty per cent of wormy fruit. All sprayed trees had a smaller percentage of wormy fruit than did the unsprayed, but the best results were obtained from the stronger solution. The number of fallen fruits was greatly lessened by spraying, and the proportion of wormy fruits among the windfalls was much smaller in case of the sprayed trees.

The figure gives a graphic representation of the results.

One pound to 250 gallons 

One pound to 300 gallons 

Not sprayed 

A number of Greening trees in another orchard, some distance from the first, was sprayed June 11th, and June 25th, with Paris green in the proportion of 1 pound to 250 gallons. In this orchard, three hundred fruits were taken indiscriminately from all parts of

each tree. The percentage of wormy fruits, while not absolutely final, may be regarded as a fair basis for comparison. The trees were in parallel rows, thirty feet apart.

TABLE II.

	SPRAYED.			NOT SPRAYED.		
	Number fruits	Number wormy.	Per cent wormy	Number fruits.	Number wormy	Per cent wormy.
First tree	300	44	14.7	200	74	37.0
Second tree ..	300	40	13.3	300	113	37.7
Third tree ...	300	20	6.7	300	85	28.3

As will be seen, more than one-third, (34 per cent) of the fruit on the unsprayed trees was wormy, while only one-ninth (11.5 per cent) was wormy on the sprayed trees. In other words, spraying the trees twice with Paris green saved more than one-fifth (22.5 per cent) of the crop. It had been our purpose to spray some of the trees three times, but as the land was in the meadow, the third application was omitted.

From a consideration of the trees already mentioned, and also of a number of Baldwin trees from which all of the windfalls were gathered and counted, we conclude that the average percentage of fallen fruit from the unsprayed trees is nearly double that from the sprayed trees. With the Hubbardston, the difference was even more marked. (See table I)

In order that we might have as many checks on our work as possible, Mr. Charles S. Pope of Manchester, undertook to spray a portion of his orchard with Paris green. One application only, was made June 25th, when the fruits were about the size of acorns.

Table III indicates the results obtained.

TABLE III.

Variety.	SPRAYED.				NOT SPRAYED.				Ratio sprayed to unsprayed trees.	Remarks.
	Whole number of fruits.	Perfect.	Wormy.	Per cent wormy	Whole number of fruits	Perfect.	Wormy.	Per cent wormy.		
TALMAN'S.....	344	274	70	20.3	392	226	166	42.3	1:2.07	All the fruits were picked from the trees, and all from the ground that had fallen within two weeks.
(1 lb. to 320 gal.)	397	308	89	22.4	681	371	310	45.5		
BALDWIN.....	451	403	48	10.6	431	338	93	21.6	1:1.61	About 2½ bushels from all parts of each tree.
(1 lb to 240 gal.)	409	349	60	14.6	462	374	88	19.0		

No comparison between the two mixtures can be drawn as the trees were not in adjacent parts of the orchard. It will be seen, however, that in both instances there is a marked difference in favor of the sprayed trees.

As indicated in the table, the ratio between the sprayed and the unsprayed Talman trees, is as 1:2.07. In other words, for every wormy fruit on the sprayed trees, there were more than two wormy fruits on the unsprayed. Or, if there were 100 wormy fruits in a barrel of apples from the sprayed trees, there would be 207 in a barrel from the unsprayed. In the same way, for every 100 wormy apples on the Baldwin trees which were sprayed, there were 161 on the trees not sprayed. As a rule, it was observed that the difference in favor of the spray was most marked on trees bearing relatively few fruits—a fact of no small importance in an “off year.”

Negative Results: Incidental to some other experiments a few trees were sprayed in an orchard belonging to F. M. Woodward of Winthrop. The work was conducted by Mr. C. E. Moore.

When spraying for the apple scab, certain trees were sprayed once with a mixture of Paris green and carbonate of copper in suspension. The poison was used in the proportion of one pound to 160 gallons of water. The trees were old, and were surrounded by unsprayed trees.

About three bushels of fruit were counted from each of four trees with the following results:

SPRAYED.			UNSPRAYED.		
Sound.	Wormy	Per cent wormy.	Sound.	Wormy.	Per cent wormy.
387	93	19.3	480	75	13.5
218	86	28.2	394	159	28.5

As will be seen, the results are indifferent or negative. The conditions were such, however, that little reliance can be placed on this test.

In no case was the foliage of the sprayed trees injured by the weaker mixture. Some Baldwin trees sprayed freely with a mixture of the strength of one pound of Paris green to 200 gallons water, were considerably scorched, however. In the use of Paris green or London purple it has been found that a fine, evenly divided spray is less liable to cause injury than is a coarse spray.

As a rule, Paris green is to be preferred to London purple, as it is less variable in character and is less liable to damage the foliage.

In general, we conclude from the results of the past season's work: Spraying with Paris green is effective in greatly reducing the injury from attacks of codling moth. A mixture so dilute as one pound of the poison to 320 gallons of water, may be effective. A mixture of the proportion of one pound of poison to 250 gallons of water was more effective, in some instances.

The use of a mixture of the strength of one pound to 200 gallons water endangers the foliage unless carefully applied.

IS SPRAYED FRUIT UNWHOLESOME?

The objection is frequently raised that fruit which has been sprayed is unsafe for food; that enough poison will adhere to render the fruit dangerous.

The matter has attracted some attention in England recently, and there has been an outcry against American apples. One of the Boston papers last winter quoted a writer in the *Horticultural Times* of London, as saying: "It is admitted that this insecticide (arsenic) is used upon the fruit itself until it is completely saturated; that it is applied to the fruit several times before it reaches maturity, and if the weather continues dry, the arsenic clings to the fruit and what

is not absorbed through the skin remains on it, forming a fine coating which must evidently be detrimental to health, especially where the fruit is consumed to any extent. If the American apple, as it comes from the vessel is carefully rubbed with the finger, it will be seen that a fine delicate powder in most cases is removed. This is the arsenic adhering to the skin."

There certainly is no doubt that fruit from which a coating of arsenic may be rubbed with the finger would be very unwholesome if eaten in large quantities. The trouble with the objection is, the fine white powder *is not Paris green*. I have yet to see the fruit which at maturity showed any visible effect of spraying, except comparative freedom from worminess.

The statement made by the Boston paper, and by certain of the shippers consulted, concerning the time of spraying is as misleading as is the statement of the English Journal, though in the opposite direction. The statement is made, that the trees are sprayed "only when in blossom, as the purpose is to get at the insect which gets in there." Now we know that this statement is entirely wrong. Spraying is never commenced, or should never be, until after the blossoms fall. The position of our English cousins is weak, and it is unnecessary to go beyond the facts of the case to prove the weakness.

The strongest mixture recommended is one pound to 200 gallons water. Personally I think one pound to 250 gallons strong enough. If we apply two gallons of the mixture to a single tree, we should use, approximately one one-hundredth of a pound, or seventy grains of the poison on the whole tree, at each application. The fruits are so small at the time of spraying, that it would be impossible to make as much as five per cent of the poison stay on them. There is not sufficient surface to retain a larger amount. But, even supposing this proportion correct, and that the trees are sprayed twice, if there are 1200 fruits—about three barrels—to the tree, the amount of poison per fruit would be less than three one-thousandth grain (.0029).

But in our calculations we have not taken into account the fact that the fruit is exposed to sunshine and rain for four months before it is ready for use, and I am not sure but Professor Riley was about right when he expressed the opinion that "it would be necessary for a man to be able to eat fifty bushels of apples in order to get an appreciable amount of arsenic into his system." There certainly is no reason why fruit sprayed as directed should be unwholesome when

mature. The great danger from the use of Paris green lies in the methods of application. Great care should be used at this time.

WHEN TO SPRAY.

In general, the proper time for the first application is just after the fruit has formed, and for the second, some two or three weeks later.

In no case should any spraying be done while the trees are in blossom. It is too early to be of any value whatever in checking the work of the codling larvæ, and very serious damage may be done in poisoning the bees which are very abundant at that season. Not only the bees themselves are killed but the honey is rendered unfit for use.

There are two broods of larvæ during the season, but we usually make special effort to check the first one. If this one is held in check, the second one will necessarily be less harmful. The time when the first brood commences depredations is not fully settled by entomologists, but it certainly extends over a considerable period, and varies with the season. It seems not improbable that we shall find that in practice certain varieties will need to be sprayed earlier than others.

APPLE SCAB (*Fusicladium dentriticum*).

I doubt not most of those present are only too familiar with the dark colored spots or "scabs" which appear on some varieties of apples, notably the Fameuse and the Maiden's Blush.

These spots represent but one stage in the life history of a plant which grows on and obtains its nourishment from the apple. Its attack is not confined to the fruit, and it sometimes causes very serious loss to the orchardist. The plant is known to botanists as *Fusicladium dentriticum*. It belongs to a group of parasitic fungi.

Sometimes in very cool, wet seasons, the fungus spreads very rapidly, and attacks the foliage and young fruit early in the season, causing almost total loss of the crop, and greatly weakening the trees. If the attack is late, after the season's growth is completed, no special damage is done, except to injure the fruit.

The disease appears on the leaves as brownish or olive colored spots. These spots, if numerous, run together, become blackish in color, and finally the leaf tissue dies.

For several seasons past, experiments have been conducted in various states for the purpose of determining a successful method of combatting the disease. It has been found that in many instances great benefit is derived from the use of some of the compounds of copper in solution.

During the past season a series of experiments was planned with the purpose of determining on an extended scale, the effectiveness of certain mixtures, and some of the problems relative to methods of application. The latter portion of the work was carried on largely in the orchard of F. M. Woodward of Winthrop, the work being conducted by Mr. C. E. Moore. Owing to local conditions, most of the problems relating to methods of application remain unsolved. Though much credit is due Mr. Moore for the faithfulness with which he attended to the spraying.

In regard to the effectiveness of spraying with copper compounds in checking the apple scab, results were eminently satisfactory. In the orchards of our President, Mr. Pope of Manchester, fifty-nine trees were sprayed with various mixtures and a suitable number of trees were left without treatment to serve as checks. The trees were of medium size, and bore from one to three barrels of fruit. The time at command was so limited, that not all of the trees could be examined critically. But a sufficient number was examined to give a good basis for our conclusions. Four different mixtures were used:

A. A modified form of *eau celeste*, made by dissolving two pounds sulphate of copper ("Blue stone"), and two pints strong ammonia, and for use diluting to twenty-eight gallons.

B. Ammonio-copper carbonate solution—three ounces carbonate of copper dissolved in one quart ammonia. Diluted to thirty gallons for use.

C. The same as B, except that only two ounces of copper was used.

D. Carbonate of copper in suspension. Two ounces carbonate of copper placed in twenty-five gallons of water.

Table IV gives the average results obtained from the examination of several trees sprayed with each solution, and of the unsprayed trees.

TABLE IV.

Treatment.	Average number fruit examined per tree	Free from scab.	Slightly scabby.	Badly scabbed.	Worthless.	Per cent free.	Per cent No. 1 fruit (as regards scabs)	Remarks.
Solution A...	459	262	125	57	12	57.09	85.0	Sprayed May 11 and June 15.
" B..	802	383	339	78	6	41.75	90.0	Sprayed May 22, June 15 and July 28.
" C..	720	237	364	109	10	32.09	83.5	Sprayed May 22 and June 15.
" D..	576	24	138	278	133	4.1	28.1	Part sprayed once, part three times.
Not sprayed.	729	30	157	332	210	4.1	25.6	No apparent difference.

As will be seen, there is a marked difference in every instance save one, in favor of the sprayed trees. The highest per cent of fruit entirely free from scab, was obtained from the use of the *eau celeste*, the gain being fifty-two and nine-tenths per cent, or more than half of the crop.

The greatest actual gain so far as marketable fruit is concerned, however, was obtained from the use of the stronger ammoniacal solution of copper carbonate. The actual increase of No. 1 fruit amounting to nearly sixty-five per cent. It is quite possible that this difference is largely due to the later application of this solution.

The results obtained from the use of the copper carbonate in suspension, will not warrant us in advising that mixture. Other tests were made in Mr. Pope's orchards, as also in Mr. Woodward's orchard at Winthrop. The indications in every instance pointing toward marked benefit from the use of the copper solutions.

As showing the necessity of doing something to check the disease, I may note the condition of certain trees in Mr. Woodward's orchard.

	Number examined.	Free from scab	Slightly scabby	Badly scabbed	Worthless	Per cent free	Per cent No. 1 fruits.	
Copper carbonate in suspension (check)	492	3	123	257	108	.6	25.6	Average of three trees.
Ammonio-copper carbonate.	556	19	184	264	80	3.4	36.5	Average of two trees.

The trees sprayed with copper carbonate in suspension were treated twice—May 21st, and June 12th. The other trees were sprayed but once, June 15.

As will be seen, this orchard was very severely attacked. Some trees were absolutely without a perfect fruit, and only one-fourth of the crop could be made to pass as "No. 1" fruit, even with the loose methods too often practiced in sorting.

In general, we conclude from the season's work,

1st. Spraying with the copper compounds is beneficial in checking the attacks of the apple scab. The increase in No. 1 fruit amounting in many cases to nearly sixty-five per cent.

2d. There is little difference in value between the modified *eau celeste* and the ammoniacal solution of copper carbonate. The materials for the former are always obtainable hence in some respects this will be more commonly used.

3d. Simple carbonate of copper in suspension has no marked effect on the fungus.

4th. A large proportion of the fruit attacked was but slightly affected, the attack being recent. It appears probable, therefore, that spraying later in the season will prove beneficial.

HOW TO PREPARE THE MIXTURES.

1. *Modified eau celeste*—Dissolve two pounds sulphate of copper ("Blue stone") in two gallons hot water. In another vessel dissolve two pounds carbonate of soda ("sal-soda"); mix the two solutions and add one pint strong ammonia. When ready for use, dilute to twenty-eight gallons. The copper sulphate should be dissolved in a wooden vessel as zinc or iron will corrode.

2. *Ammonio-copper carbonate solution*—The most satisfactory formula used during the present season was :

Three ounces copper carbonate—One quart ammonia, thirty gallons water.

Dissolve the copper carbonate in the ammonia, and add to the desired amount of water. In some instances where the ammonia is very strong—26° Baumé—the foliage is scorched, unless the mixture is more dilute. With 26° ammonia dilute to thirty-five gallons.

In preparing either of these mixtures, it is well to make the stock solution the day before applying, and to make a considerable quantity—merely observing the proportions suggested.

The ingredients of the first solution may be obtained at any local drug store. Carbonate of copper, and ammonia in bulk may be obtained of Weeks & Potter, Boston, Eimer & Amend, New York, W. S. Powell & Co., Baltimore, Md.

Copper carbonate will cost about fifty cents per pound. Ammonia by the carboy, of eighty pounds, costs nine cents per pound. Sulphate of copper costs about ten cents per pound.

APPARATUS.

Good force pumps with suitable spraying nozzles are now obtainable at very reasonable prices. We have been very well pleased with the "Perfection," manufactured by the Field Force Pump Company, of Lockport, N. Y. This pump has a discharge pipe returning to the bottom of the barrel, thus keeping the mixture agitated. The pump with brass cylinder and plunger costs \$12.00.

Good pumps may also be obtained of the Gould Manufacturing Company, Seneca Falls, N. Y.

On general principles, the "Climax" nozzle manufactured by the Nixon Nozzle & Machine Company, Dayton, Ohio, is the best. That is, the spray is more finely divided, than is the case with some others; but the nozzle is so small, too much time is consumed at each tree.

When well made, the "Graduating Spray" nozzle which comes with the "Perfection" outfit is very satisfactory. We find that nozzles of this description as obtained from different dealers, are not uniformly good.

In applying Paris green, it is important that the spray be finely divided, but with the copper solutions, it is doubtful if the finer spray, and the saving in the quantity of material, will compensate for the longer time required in using the Climax nozzle.

Under no circumstances is it advisable to purchase a pump with iron cylinder and plunger. The iron will quickly rust, and unless very carefully handled, the pump will be ruined the first year.

With most pumps only five or six feet of discharge pipe are sent. It is advisable in all cases to have at least ten feet of hose, that the top of the tree may be easily reached. This is of special importance in using Paris green, as with the short discharge pipe, there is danger of poisoning from contact with the spray.



FIG. 4.
"Perfection" Spraying Outfit.

Figure 4 represents the "Perfection" outfit. This is the pump we have used in most of our field work. The pump is supplied with about ten feet of hose, and also has a second discharge pipe returning to the bottom of the barrel, thus keeping the mixture agitated. The cost of the pump with brass cylinder and plunger is \$11.50. It is manufactured by the Field Force Pump Co., Lockport, N. Y. Other pumps of a similar style may be obtained of the Gould Manufacturing Co., Seneca Falls, N. Y., also of Rumsey & Co., of the same place.

In large orchards it is no small task to work the pump by hand and there is a demand on the part of owners of such orchards for a labor-saving device. To meet this demand, several styles of pumps with automatic gearing, have been constructed. One of these, the "Victor," made by the same company as the "Perfection" outfit is shown in figure 5.

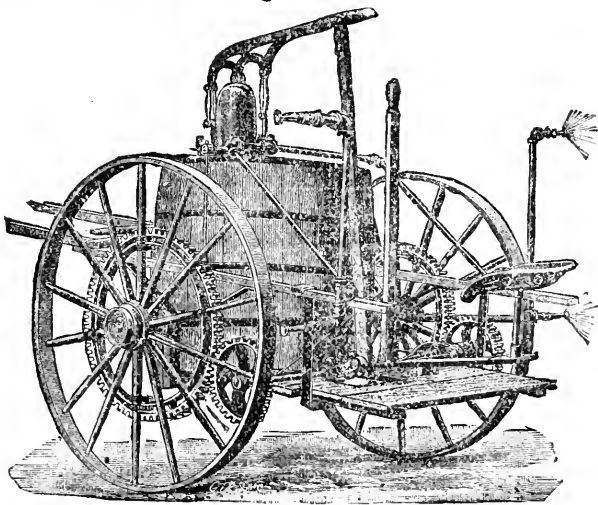


FIG. 5. The "Victor."

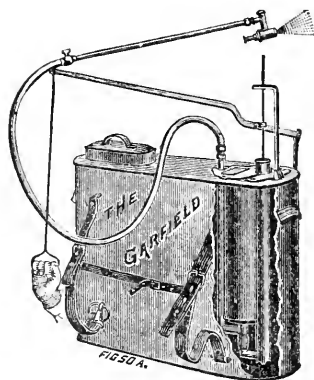


FIG. 7.

Figure 7 represents the form made by the Field Force Pump Company, at a cost of \$14 00. There are several other pumps not greatly unlike this, which sell at about the same price. The *Eureka*, manufactured by Adamson & Son, Washington, D. C., is an excellent pump, but is more expensive than the others, costing \$21.00. The knapsack sprayers are specially valuable in the small fruit and vegetable gardens, for spraying currant bushes or potato vines.

CONCLUSION.

I have given you in a general way the results of the past season's work in combatting two of the most serious orchard pests. We have seen that almost without exception the indications are that by the judicious use of Paris green, the work of the apple worm may be largely controlled. This conclusion is not based on a single isolated experiment, but on the average of several tests, conducted under different conditions, in various orchards. There is no ground for fear in the use of the sprayed fruit after maturity, but caution should be used at all times.

We have also seen that by the use of some of the compounds of copper, the attack of the apple scab may be held in check. That the amount of "No. 1" fruit, may be increased in this way to a very marked degree, ranging from ten to sixty-five per cent.

It is not our purpose to relinquish the work at this point. There are many problems still to solve. It is hoped, however, that the results already accomplished will be the means of inducing many of our orchardists to undertake some of this work for themselves.

DISCUSSION.

Prof. COCK. I have watched with great interest the progress made in spraying fruit trees the past season. The experiments made in Mr. Pope's orchard under the direction of Prof. Munson were carefully conducted, and the figures the professor has given you may be safely accepted as not showing more than was actually

accomplished. If we can learn an inexpensive method of destroying, for example the apple scab, it will be of much advantage to fruit growers. This apple scab is working great injury to the fruit interests of Maine.

Mr. DAWES. My experience in spraying thus far confirms all that Prof. Munson claims in the destruction of the codling worm. The great difficulty is to find the mixture that will do the work wanted without scorching the leaves.

H. W. BROWN. In our orchards the past season we have sprayed with great success. A neighbor, whose farm is next to ours did not spray at all. He had more than double the wormy apples we had. He said we drove all the worms into his orchard.

Sec'y KNOWLTON. While I am well aware of the important results reached in spraying, at the same time I am in sympathy with the cautions thrown out at some of our previous meetings. It requires but little skill to use Paris green successfully, but there are few of us who in its early use have not injured the foliage which we sought to protect from insects. Use it by all means if thereby you can produce better apples, and I believe you can; but before making a general application be sure you know *how much*, or perhaps *how little* is necessary to do the work successfully. All the time it is being used it should be borne in mind that we are handling a deadly poison, and that a mistake may prove fatal either to man or foliage.

GRAPE GROWING.

HENRY W. BROWN. The past season I have been in Massachusetts on a small farm in Concord. There we have no trouble in raising grapes successfully. In fact, for several weeks the past season Massachusetts grapes were about the only grapes in the Boston market. The vines are set in rows about six or seven feet apart and about the same distance in the rows. Wires are fastened to posts or strong stakes for the vines to run on. The ground is thoroughly cultivated between the rows, and bone meal and some form of potash are worked into the soil. No winter protection is given them. The vines are trimmed so as to make new wood for the next year's crop, the new growth being cut back to this. In trimming a vine it should be borne in mind that it is the new wood only that bears the fruit, so that the old wood after fruiting must be cut out also. It is the practice with Massachusetts growers now to girdle the bearing wood about the first of July or a little later. The

branch is girdled so as to leave one or more buds between the part girdled and the vine. After the fruit is off, the branch is cut off at the point where it is girdled. By this operation the fruit matures earlier by two or three weeks, and is as good or even better. The market is better and in some of the later varieties it saves them from the frost.

The same method of pruning and training in my judgment will give Maine people good grapes in most seasons. But of course the season is shorter in Maine and only the earlier varieties can be grown with success. Moore's Early is one of the best for Maine. The Worden is the next. The Hayes, a small, light colored table grape, delicious to the palate, is also very good and deserves a place. The Niagara is another very good grape. The Green Mountain and Hartford Prolific are also good varieties for Maine.

Concord is the home of several popular varieties of grapes, among which are the Concord and Moore's Early. There may be found growing wild near by our farm grapes of excellent quality. Nurserymen from all parts of the county send to Concord growers for the Wood of Moore's Early, as well as for several other varieties. This wood in many cases pays a good profit. It is nothing more than the vines cut off in the autumn. One of our neighbors has sold his wood for more than \$100 in a single season. This wood is used for cuttings by the nurserymen, from which new vines are propagated.

Mr. GILBERT. This matter of grape growing in Maine is a hazardous business and unprofitable. Only those favorably located can grow them successfully, and then only the earliest varieties are at all certain of ripening.

Pres. POPE. Many people are deceived by the highly colored plates shown by the tree agents and buy varieties that are worthless for Maine. It is better to find out from some Maine fruit growers the varieties that are known to do well in the State and then order direct of the nurserymen. The buyer in this way will be sure of the best varieties and quite sure to obtain what he orders.

THE MARKETING OF APPLES.

By CHAS. E. WHEELER, Chesterville.

One year ago when I visited your county for the first time and participated in the exercises of a Farmers' Institute in a town adjoining this, I took occasion to say: "That opportunities give us the privilege of accomplishing many things to enable us to gain the ascendancy in producing articles of common use, and possessing such satisfactory qualities as to meet the tastes of the consumer which would have a tendency to increase the demand, and at the same time, establish a price which would be remunerative to the producer." And although the subject then under consideration was different from that just announced, the same rule may be safely applied.

In studying upon this subject the mind is allowed to believe that the basis for a safe and proper disposal of our fruit is found in the orchard where originally labor and expense have been satisfactorily applied, but through negligence and waste the product has been found so unworthy at times a nominal value only could be placed upon it. A comparison has been made between some of the orchards as they now exist, with a herd of choicely bred cows which the owner had procured at a large outlay of money, placed upon his farm which was well adapted for dairying purposes, and he confidently looked forward to the time when returns would come from the product of the dairy so pleasing and remunerative as to cause him to cheerfully reflect upon his sagacity and wisdom in the investment of his means. But alas! some ill tempered laborer in his employ had exerted such a baneful influence over the herd as to utterly destroy its value for the purposes intended.

The reputation that may be gained in the disposal of any class of goods may be illustrated in the case of a retail dealer in flour who had sold a large quantity of a certain and satisfactory grade, and his trade was being continuously increased when the agent called upon him and after shrewdly alluding to the success which had attended him, offered to supply him with an indefinite amount of flour stamped with the same brand that had aided in selling former lots, and which had gained the confidence of the consumer, but was really of an inferior quality, and yet upon the merits of previous sales of the same brand a large amount of this poorer flour could be sold at the

same rate as the other, but costing much less, and thereby increasing the profit of the retailer.

To a considerable extent Maine has enjoyed the reputation of producing some of the best fruit known to the trade; and if dealers and consumers could feel assured of obtaining what they bargain for, they would not higggle about the price paid. It is a lamentable fact that some packers, yea, many, and that term will doubtless include some who *grow* the fruit, will nearly fill the barrel with an inferior quality, taking care to place at the top some of the finest quality, then put on the head, marked in big letters, "A No. 1," and in due time send it to the market. How far removed is this practice from that attempted by the flour agent quoted above?

The question of supply and demand will regulate itself, but the principle of honest practice in the handling and marketing of fruit lies within the province of man to regulate and control, and the best methods to adopt on a matter worthy of the most candid and serious consideration.

It is claimed, and indeed it may be true, that this is an exceptional year in the matter of the disposal of our fruit. Even the most careful and honorable producers and dealers find the market in an unusually depressed condition, and yet at present prices no branch of farm husbandry, excepting possibly that of dairying, brings better returns. In my own individual case and it was no exception in the locality where I reside, one dollar per barrel was received as they were taken from the orchard, which included all grades, and no barrels furnished, the only expense being the picking, and in our case the drawing for the distance of two miles.

One of my neighbors has in cold storage his entire crop of '91, excepting the Harveys. He informs me that his fruit never grew in greater beauty and perfection than it did last season, and its present condition is very fine. With an outlook for high prices less encouraging than in former years, yet his anticipations for a satisfactory deal as the season advances are of such a nature as to cast rays of composure upon his countenance. And this, doubtless, is only one case in the many that exist in the different sections of our State.

But there are many small farmers, orchardists, scattered throughout the fruit growing belt of our domain who seem well nigh discouraged at the present aspect of affairs, and reason, not unwisely perhaps, that a repetition of this dull period in the market is liable to again occur, and having relied so fully upon the result of this, to

them important factor, in the matter of ways and means, and having no other resource to aid in bridging over present emergencies, are unable to reconcile themselves to the arguments and theories advocated by prominent men connected with pomology in regard to a well regulated demand for fruit. And in aid of this class of producers my mind has of late been under pretty strict discipline, and I have come to the point that warrants my venturing an opinion in the form of a plan that if adopted may assist in establishing rates more equal and satisfactory than any now in use.

The Pomological Society has wisely held its meetings in various portions of the State, and through its speakers has advocated an advanced theory in the care of orchards and the preparation of its product for the market. The people have kindly received these teachings, and much improvement has been made. Some State societies have adopted rules that may seem arbitrary, but the result is proving the wisdom shown by such action. For instance, in one State the requirements for the dimensions of a barrel in which the fruit is to be packed, the quality of lumber used and its mode of preparation, and on this point one cannot be too particular. The largest grower of fruit in my county uses only new barrels made to order, every stave and heading planed, the hoops flat and nicely fitted, and when packed ready for market its appearance pleases the eye nearly as much as the contents will satisfy the consumer when it shall be opened in his larder.

Another State society prescribes a rule as to the size of the apple to be packed, as well as the color which shall adorn its surface. These may seem to many to be small points, but when you reflect upon the care, taste and skill manifested by the operators of our creameries and large private dairies, and contrast the demand, together with the firm prices obtained, with the old, haphazard way of doing things, it will not require much foresight to see the importance of exercising the greatest care and prudence in the management of this universal favorite among the people of the fruit-eating regions.

I therefore submit to this Society a proposition that its officers, or some committee chosen for the purpose, employ a competent person, to be denominated a head packer, if you please, who shall be located, together with suitable help, in one or more places in each of the counties where the quantity of fruit usually raised shall warrant the outlay, such person or persons to receive the fruit from the

grower, sort and pack the same, make the sales and be responsible to those who bring the fruit in the payment for the same—the Society to receive a certain per cent to cover costs.

By making Portland a shipping centre, suitable storage room can be obtained, and when an agent from any large purchasing firm is in pursuit of a first-class article, those lots having the brand of the Society to recommend them will at once attract attention, and as its reputation for honest practice and deal may become established, it will prove a medium through which the average orchardist may dispose of his product, feeling sure that it stands an equal chance with that of his neighbor, and receive a corresponding amount as a result for his care and labor.

I have a strong and confiding faith in the future prosperity of our noble State. All I am, all I ever expect or hope to be is bound up in the possibilities, nay, the probabilities that are soon to be grasped. The earlier strivings of my ambition were directed in the line of securing a herd of thoroughbred Jerseys worthy a place on any farm, and success has attended my efforts. My next move was for an orchard, and after purchasing an outlying farm well located and adapted to my purpose, what leisure time I can command is devoted to the pleasing and encouraging work of both grafting and pruning as well as the transplanting of hundreds of trees that take kindly to the soil made ready to receive them. Whatever of weal or woe, therefore, that fickle nature or force of circumstances may bring to the country, I shall try and be prepared to meet the result, always looking forward to that long expected time when farmers will be the "kings of the land" and their reign usher in the day of universal prosperity.

MAINE APPLES IN THE ENGLISH MARKET.

By EDWARD PEAKE, Portland,

Shipping Agent of J. C. Houghton & Co., Liverpool and London.

Your secretary, Mr. Knowlton, has kindly suggested that I should make a few remarks upon "Maine Apples in the English Market," and it will afford me much pleasure to answer to the best of my ability any questions that the meeting may choose to put to me.

The demand in England for fruit of every description is an increasing one every year; the people of England getting more and more into the way of eating fruit regularly, and looking upon it as a necessary part of their diet.

No doubt growers think the prices that have ruled this season have been low but if it is taken into consideration that from the beginning of the season until the end of last week over one and one-fourth million barrels were shipped from United States and Canada to the United Kingdom it must, I think, be admitted that the prices paid by the English consumers have been very fair not to say good; and quite as high as could reasonably be expected under the circumstances. When it is remembered that to the price obtained by the grower here must be added the freight, and all charges and shipping expenses it can hardly be said that the prices paid in England have been extremely low.

The present season has proved the capabilities of the English market for the disposing of very large weekly shipments, and all present appearances seem to indicate that growers need have little fear, taking one season with another, of their crops not realizing remunerative prices. The very low prices of some of the fruit this season is accounted for by the fact that such fruit was of such quality that no one could reasonably expect it to return good results either in the English or any other market. The fruit of first quality has all along brought fair prices considering the excessively large shipments.

Usually the English market is well supplied with common fruit grown in England and on the continent of Europe. Had it not been that this season the supply of this fruit was smaller than usual the inferior Maine apples would have done much worse than has been the case.

It is very gratifying to find that there is a strong feeling growing up here that the very inferior fruit should not be sent across the water but be disposed of upon this side. As I am strongly convinced it would prove to the interest of growers both individually and collectively that only fruit of fair size and quality should be selected for shipment. This would reduce the quantity for shipment and the fruit shipped would procure better prices in consequence. The increased prices for the better quality shipped would, I should say, more than make up the loss on the inferior fruit through disposing of the latter here.

Independently of this, however, it would follow that if no inferior fruit were shipped Maine apples would further improve their great reputation and this would result in their having a higher relative value compared with apples from other parts than is the case at present.

This is undoubtedly a very important matter for the consideration of growers, and being much interested in the question I am much pleased to find such insistence being laid upon these facts at this meeting.

As regards the best varieties for shipment, the hard winter kinds are those in demand. The Baldwin, as you well know, stands first in the list, there being far more of this fruit shipped than anything else. This fruit has the great merit of standing handling well and upon the whole is about the most satisfactory fruit for export, being a great favorite and always in demand. Kings bring the highest prices of any Maine fruit, but it seems to be generally conceded the results to growers of this fruit are not as great as for Baldwins. Northern Spies, Greenings, Ben Davis, etc., also have a ready sale. The Ben Davis up to the present has done very well but it will not do to trust too much to this fruit maintaining its present position, as should shipments largely increase it is probable that present prices compared with other fruits would not be maintained.

I have only mentioned winter fruit as suitable for shipping because under present conditions of shipment the risk of sending fall fruit is so great that I always feel compelled to discourage the experiment of sending it. If it could be got over in good shape it no doubt would do well and give satisfactory results; but this is such an uncertainty as to approach the impracticable. The day may come when it will be possible to send by steamers provided with special holds and contrivances for keeping fruit cool but until then growers

will do well to raise only such quantities of fall fruit as can readily be disposed of in the home markets.

As you can readily understand the barrels have a great deal of handling while in transit from the farm to the English market and it is absolutely necessary to have barrels of sufficient strength to carry the fruit in good shape.

As it is an advantage to have clean, neat looking packages new barrels are best if made sufficiently strong. It is, however, better to use flour barrels than new ones which are not equally as strong as a flour barrel. In this case great care should be used to have the barrels properly cleaned out and also to erase any old marks from the head so that when the barrel is put up it may look as neat and clean as possible.

All fruit sold in Liverpool is sold from the wharf or quay and not put into store. Samples are drawn from each lot and taken to the sale room where some of the barrels are turned out in the presence of the buyers at time of sale, and the buyers thus have every opportunity of properly appraising the fruit.

With respect to brands, some brands have a preference with the English buyers. The explanation of this is that the shippers of the brands referred to always take care to ship only No. 1 fruit under what may be termed their standard brand. For their shipments of second quality they use a different mark altogether. The brand of the first quality apples thus gets a better name than would be the case if the same brand were used for the best and inferior fruit.

The apples are sold at public auctions which are held three times a week. There is a large attendance of buyers from all parts of the country and thus is assured the highest prices being attained that the laws of supply and demand will permit of.

In conclusion I may say, that, in my opinion, the prospects for Maine apple growers are encouraging. The prices that have ruled this season have had the effect of largely increasing the consumption and this will have a good effect next season and the following years. There is every indication that the taste of the English people for fruit will increase every succeeding year.

DISCUSSION.

T. M. MERRILL. Reference was made by Mr. Peake to the barrels used for packing. I am satisfied with good, clean flour barrels, and I believe they are preferable to the new barrels made in this State. There is often much said against the buyer, and some try to make

him responsible for the inferior quality of Maine apples that find their way to market. The buyer is no more to blame than the farmers, and most shippers would much rather have strictly No. 1 fruit than any other. But they have to buy the fruit as they find it and do the best they can with it.

Mr. GILBERT. If the shippers insisted on having first quality of fruit the farmers would be glad to furnish it. The shippers are too willing to pack No. 1 and No. 2 apples in the same barrel and in consequence the farmer is the sufferer. The improvement should be with the buyers. Let them improve their practices and require better work of the farmers.

FRUIT GROWING IN MAINE COMPARED WITH OTHER AGRICULTURAL INDUSTRIES.

By L. F. ABBOTT, Agricultural Editor, Lewiston Journal.

Taking up the subject in a general way, comparison may seem fair and just. But arguing from a given standpoint as applicable to the whole, and basing estimates of successful enterprise in fruit growing in one section of the State with other agricultural branches in another locality, hedged about by differing circumstances of location as affected by soil and climate, the comparison becomes unfair and misleading.

The truth of the matter is, in our grand old State of Maine there is such diversity in soil, climate and other modifying conditions, that comparison between those lines of industry requiring unlike environment for their full development, becomes unjust and out of place. Hence, what I have to say this evening will be largely in a general way, not drawing the lines too sharply, because in a State like ours, where industries are so varied and everything of the best, all, in one sense, are on a general level.

And again, in view of the diversity of our agricultural interests, and the development of those industries under the fostering care of the best government, both state and national, that long-suffering humanity ever found fault with, it will not be amiss to consider the general status of agriculture, as well as the agriculturist in Maine at the present time.

Special lines in agriculture in our State form vast industries in themselves. This may be said of dairying, fruit growing, market

gardening, etc. But underlieing these, forming the basis of all, the great and paramount industry is the live stock of the farms of Maine.

The hay crop and the stock it fosters are the two great underlieing factors in economic agriculture in Maine and New England.

While on general principles we concede this as a whole, there are individual lines of work, forming large and growing industries in themselves. One of these is fruit growing. And if any one of the varied industries of the State can be said to be independent of all other industries it is this. But commercial orcharding has not arrived to that degree of prominence in Maine as to assert its independence of other interests. Hence, we generally find the orchard an adjunct to the farm where mixed husbandry forms the rule. It becomes, then, a matter of policy in agricultural operations as to which lines of industry to devote the greater attention. So in instituting comparisons between fruit growing and other industries carried on on the farms of Maine, we cannot, as I said before, draw the lines so closely as to be appropriate to every section of the State.

The individuality of the farmer comes in as a potent factor to determine the poise of financial preponderance. One will succeed admirably in caring for cows, and make a financial success of dairying, while he would be an utter failure as an orchardist.

It is very fashionable in times like the present to say that fruit growing does not pay. So the same may be said of every specialty of the farm at certain times. Orchardists say in seasons of full crops of fruit that the trees only bear every other year, and then the market is always so crowded with fruit when they have some for sale, that it hardly pays the expense of gathering and marketing. But this argument of crowded markets, and low prices, has been advanced against almost every crop grown upon the farm, and yet the owners grow these same crops, and make money enough to support their families, pay their taxes, and some of them a fair percentage besides.

A COUNTER PROPOSITION.

If I draw the line of comparison between one or all the varied industries of the farm and orcharding, I shall be met with a proposition something like this: Admitting that fruit is easier raised and that the profits are greater than realized in most farm commodities will not the inculcation of this idea stimulate to over-production of fruit, and prices run down so low, there will cease to be any profit

in it? Take the season of '91, for instance. Our crop of fruit was a very large one throughout the country. But it so happened that apples in Europe were a light crop, so the foreign trade helps us out somewhat this year, but what would have been the condition of the apple market if the European crop of apples had been good last year?

It is admitted that here is a contingency that is likely to be met in the future. But it should not be overlooked that the rate of consumption of fruit is increasing in equal ratio with its production. Look at the export trade in apples this winter. Nearly a million and a quarter barrels of apples have already been shipped from this country to England, and the trade is still going on. There will be seasons when export trade will be less, of course, and full crops of fruit here will send the price down to a low figure, but we can rely upon one thing, this year's crop of fruit will not interfere with next year's crop.

In years of plenty the evaporator should be called into requisition to modify the condition of fruit and so enable the orchardist to hold it till better prices can be realized. This is being done.

A few days ago one of the largest orchardists in Maine, and one who makes orcharding the specialty of his farm, and has made it a grand success, wrote me as follows:

"It is hard to boom orcharding or feel very much elated in regard to it in years like the present, but crops that are perishable like apples, potatoes, etc., are subject to greater fluctuations in price than those that are not so perishable. The market is so extensive, and is still extending more and more for apples, that when there is a partial failure they will pay the intelligent orchardist four times as well as any other crop. Ever since I can remember there have been years that apples did not pay for harvesting. That was when but few were grown.

"Three years ago apples were more of a drug in the market than they are this year, but the two years following more than made up for it. I expect it will always be so, and I am not so much discouraged as some orchardists are, who, when there comes a good year, will be more elated than I shall.

"It is true that if it had not been for the European market, apples would have been worthless for sending to market, but I think we can always count on the European market later in the season, even when there is a large crop there, for their apples are gone early, and

I expect other markets will be opened up for our fruit, especially evaporated and canned apples. If we can compete with other portions of the country in anything we can in orcharding. Orchardists should be prepared so that, when prices are too low, they can put their apples in shape to keep till there is a call for them, by evaporating or canning, and I think by so doing they can make the business as profitable in any year as any other branch of farming.

“The best of apples can be raised in Maine on land that is not, at present, worth five dollars per acre. Not much capital required for the business, eh? Some brains though, and more perseverance.”

By way of postscript he adds: “I have evaporated nine tons of apples this year and expect to evaporate more if prices of green apples should not improve.”

Now, my friends, let me say right here that I believe in orcharding as an industry on Maine farms. And I will tell you why I believe in it. I will tell you, also, wherein it excels as a profitable factor in our Maine agricultural operations.

I do not believe every man who takes up the business simply for the money he thinks he sees in the near future, will succeed in fruit culture. Also the same may be said of most other specialties of the farm.

There is a necessity for special fitness and training for special objects. The careless man, the bungler, the easily discouraged and short-sighted farmer, will make a failure in orcharding, as he will be likely to in everything else, because he lacks application and faith in his work.

TWO ADVANTAGES.

There is a two-fold advantage to be derived from fruit culture, a point in its favor often over-looked by those engaged in it. Besides the value of the fruit grown, it increases the value of land. But I hear some one say, “I don’t want to sell my farm.” Perhaps not, just now, but hundreds do, just the same, and there are but few farm homes in Maine but some time in the past have changed hands, or will in the future.

Right here occurs to me one example. I know an old homestead in Androscoggin county where the late occupant, the second in lineal descent to foster the paternal acres a few years ago, when the family were in health, it seemed as though other generations in the line were likely to hand down the rich inheritance of a fine fruit farm.

Death came to this household and took the only son. The father, after a few years of carrying on the farm with hired labor, felt the care too much for his increasing years, so, after many misgivings and heart yearnings the old homestead passed into other hands. And it brought a good round price. Why? On account of its rich endowment of Baldwin apple trees.

Let me tell you about it. I know this homestead well. Happy have been the visits I have made there, and the memories of the hospitality shared under the roof-tree of this fine old mansion, built when Maine's pines were thickly standing, large and tall, over a large area of the State, are restful as a strain of music at twilight of a summer's day.

The fruit trees growing on this farm formed the main factor in its sale. And yet there was not a large orchard of bearing age on the farm. Strange as it may seem, yearly crops of 200 barrels, mainly Baldwin apples, were gathered and stored in the capacious fruit cellar.

Now you ask, "How can these things be?"

This is a high, rocky farm, with a soil richly endowed with the elements suited to orcharding. If you should ever go to the "Norlands" where the famous Washburn family of Livermore were cradled, to the beautiful eminence now surmounted with a quaint old homestead, the fine, modern family mansion, with a beautiful little church whose spire overtops the unique stone library building, you will be very near the old farm I speak of.

The rocks were cleared from the fields and these were so plenty that walls were built enclosing fields of four to six and ten acres. On the line of these walls were set native seedling trees some seven or eight feet from the wall. These trees were set about thirty feet apart on the line of the wall, the trees on the opposite side standing at a point midway between the trees of the former row.

These young trees were grafted in the branches or in the stock as the fancy of the owner led. These fields in the course of the regular rotation; oats or mixed grain, followed by dressing and planted to corn and potatoes, seeded to grass and clover again with wheat or barley, remaining in grass four or five years, then the round of rotation went on again.

These trees grew from this course of cultivation, as might be expected—they will grow over on these hills anyway—and became quite constant bearers, and give apples that keep till the frogs peep in April.

This old homestead was sold—others will be. But there may be many old homesteads that lack this one thing needful to attract a buyer and influence the paying of a large price.

A PERMANENT INVESTMENT.

It is a fact a good orchard will do more towards selling a farm for a high price than many other things which are a great deal more expensive. When a man puts out a lot of nice fruit trees he then and there makes a permanent improvement of great value.

I do not come here to encourage one line of farming to the disparagement of another. As I have attempted to show, education, situation, structure and quality of soil, and the thousand and one things which environ Maine farmers, are among the factors which should influence him in adopting special lines in agricultural pursuits.

Beef is low, yet I contend that on our natural grass farms, on our good corn-growing lands, we can still make money on beef.

The watchword of the farmer should be to cheapen the cost of production of all classes of commodities the farm produces. Cheaper beef, pork, butter, wool and mutton, and fruit. Two cents saved in cost of producing a pound of beef, pork or butter, is equal to the price enhanced to that amount.

Ex-Governor Hoard said at the late dairy conference at Auburn, that he hoped to see the day when good butter could be put into everybody's mouth for twenty cents a pound, and he still retain the same profit he was making at thirty cents a pound.

The same rules are applicable to orcharding and other lines of farming. We should be fitting ourselves to meet these conditions whatever the circumstances of markets may be. When the contrast comes before us we shall find that it is easier to gain a fair per cent of profit on a barrel of apples than on a pound of beef or butter. All the possibilities, even under the present large area devoted to orcharding, and the increased attention likely to be given fruit culture in the future, are directly in favor of orcharding over other special lines of agricultural industry applicable to Maine farms.

The markets of the world are open to us. When we begin to talk about a market for apples Maine holds the right of way. There are several reasons for this.

The excellence of Maine's winter fruit is conceded, its keeping qualities are equal to the best, and our climate is such that when the crop of the great apple growing regions a few degrees south of

us are put upon the market, ours may remain a little longer in the cellar.

A DRAWBACK.

But there is one drawback to our prosperity in this line and this is an instance where the many suffer for the sins of the few. A class of orchardists and buyers commit a culpable wrong by fraudulent packing of fruit for market. Upon this point one of the largest apple buyers in Franklin county writes me. He says:

"I believe there has got to be a change in the way apples are packed for market or Maine will get left. On the whole, Maine fruit is packed the poorest in any state. This is not as it should be. We have the best fruit, and if the fruit could be packed honest, we could get a paying price any year. I know of a lot of apples that were shipped to Boston last fall and sold for \$3 a barrel as soon as they arrived. The same parties have had the apples of this orchard for a number of years and they were sure of the packing and willing to pay for it.

"There are lots of apples that will not get to market this year just because their owners will not pack them as they should be. Buyers in such a season as this shun such lots. In seasons of scarcity the market will take most anything and pay something for it, but in seasons when fruit is selling slow and low, these distrustful lots are likely to get left, as they should be."

Honesty pays in the long run, while rascality like a boomerang, rebounds and injures both guilty and innocent. Intellectual obliquity is bad enough in these days of schools, but this boomerang of moral crookedness which barks the shins of the greater innocent number as well as the lesser guilty ones, must be overcome by the inculcation of honesty from principle and policy or individual interest. Most people will leave off sinning if they can make a dollar by it.

THE EDUCATIONAL IDEA.

The orchardist of the future will be educated in his special field. So too, may be said of other lines of agricultural industry, in fact, this is so in a large sense now; but the change in this respect has just begun. The time is coming when the fundamental principles of agriculture will be a part of the curriculum of all our schools. The age in which we live demands it.

Formerly, more than at the present day, mixed farming was practiced, wherein more than one of the varied industrial specialties

were fostered. Later, progressive methods have lead to special lines in industrial practice.

The relations of one section of the country with another change with the progress of industrial ideas. Population increases and markets for all the products of the farm fluctuate and change. Methods of production, as well as the commodities produced, feel the force of twentieth century push and energy. This is true in relation to our stock, our butter and cheese, our apples and small fruits. The only thing for the Maine farmer to do, is to catch on and keep up with the procession.

This we have not done. The average agricultural mind is slow to appreciate the circumstances of environment. It takes a good deal of plowing, and sub-soiling, and harrowing and warming by the sunlight of progressive thought and ideas, before it comprehends that the procession is moving forward.

But the dawn of a better day is upon us. Farmers are reading more, thinking more, and above all, putting into practice the lessons they have learned by their research. Those great lights, the experiment stations and agricultural colleges, ably supported by the boards of agriculture and kindred associations fostered by the state and national governments are a power, which, sustained and reflected by the agricultural press, are working radical changes in thought, ideas and practice, as a whole, in New England agriculture.

Human thought is progressive. We that are older and have kept in touch with the spirit of progress and the environing forces which impels to the diffusion of light and knowledge, must admit that ideas are dominant in the destiny of the commonwealth which means the agriculturist, because he is the better half of the commonwealth.

For the reason I have stated we are in a transition period regarding agricultural technics. Old methods and obsolete notions have not all been discarded, nor will they be till the present white-headed generation has become obsolete. The old-fashioned, slipshod farmers are not all gone; but the new-fashioned broader brained—because a higher developed brain—farmer is just coming.

THE FORCE OF CIRCUMSTANCES.

The farmer of the earlier period adjusted his practice to his surroundings and his ideas developed accordingly. But his practice of necessity, in conformance to the laws of cause and effect, in time—though so slow the contemporary generation failed to discover it,

perhaps—felt the influence of the wonder-working instrumentalities offered by the industrial idea in education, so now science, chemistry and capital, are the arbitrators in the readjustment of the old order with the new.

Under the old regime, drifting was the ideal in progressive industry, if such can be called progressive. But drifting is not progress. Inanition never transformed an atom or molecule into matter. Action is the law of progress in the natural world and must be in the physical and mental.

But the thought should not be entertained that this transition state is confined strictly to the agricultural class. It may be more apparent in this class because the last, perhaps, to become involved in a change any way.

The world of ideas is moving on in all departments, and changes are apparent in all departments of thought and research. Look at

EDUCATIONAL METHODS

of the present day as compared with twenty-five years ago. Then the youth of the farming districts were largely at the mercy of circumstances, and the intellectual obliquity of the farmer's boy or girl, was condoned and viewed as cause for pity and commiseration, on the part of those brought up under more favorable circumstances.

But to-day there is no excuse for the delinquent in intellectual training. The privileges accorded by our good commonwealth for the boy or girl to acquire an education are as free and almost as copious as the gracious sunlight which daily floods the universe.

There is culture and culture. The common school has been the foundation upon which this country has builded capacity and character, but as well as the work has been done, the change incident to industrial environment calls for a change in methods of mind-training. There must be a re-adjustment and a coalition, so to speak, of educational and industrial ideas. We are now on the edge of that time.

The older system needs to be supplemented by industrial and manual training. The Maine State Grange, and the Board of Agriculture joining hands, started a grand enterprise which culminated in the compilation of that grand little work by Prof. I. O. Winslow of St. Albans, this State, called the "Principles of Agriculture," for common schools, whereby the rudiments of agriculture are taught. This gets down to the root idea, and makes possible the orderly

expansion of our educational system so that the State becomes so its citizens can make the most of it.

It is time the elementary theoretical in education gave way to the practical, that the vast army of our coming population who must live by labor, and upon the results of whose labor depends the welfare of our State and country, have educated hands as well as heads.

THE INDUSTRIAL IDEA

in education has a broad scope. It takes us beyond the range of the school room and college curriculum, to the farm, the shop and the various vocations that go to make up a busy life.

The foundation of every industrial business venture, is the market to be found for the products produced. The business world to-day runs in specialties. The idea is becoming prevalent in agricultural operations. Specialists in this branch or that carry the work to the highest state of perfection. This educational idea before spoken of comes into play here. But not affecting all alike for all are not nor will not be eminent in like lines of farming. The man who makes a success of dairying may not be especially interested in orcharding, and so on the other hand the successful orchardist would be a decided failure as a milk man and butter maker.

To be successful in any special line of work the rule holds good that the individual must have a love for that particular work. You can't stop a square hole with a round plug. There will be a leak at the corners. Special lines of industrial work call for special fitness for the work, as well as for special education of the idea to be consummated.

The industrial idea in education and training will overcome the disparity, in a large measure, which exists at the present time in relation to the co-ordination of agricultural specialties. This is to be the basis of much of education in the near future, as it is the training of our agricultural colleges at the present time. In the future, far more than in the past, the orchardist will be an educated specialist, educated in the practical units of the business.

HOW TO KEEP THE BOYS ON THE FARM.

By Prof. ELIJAH COOK, Manchester.

This question is often considered and it must be acknowledged to be important in all its bearings. The last census shows a rapid flocking to the cities from the country, a circumstance which bodes ill and ill only to all classes of people. To turn this tide in some measure and induce the young man while deciding upon his life work, to give the old homestead due consideration, is worthy of the best efforts of all those capable of influencing the people. The advantages of the farmer are many and great and are such as affect every part of his being. A writer in *Harper's Weekly* recently began an interesting article by saying that farmers are chronic grumblers, a statement which in the main I deny, and yet it contains truth enough to make it worthy of notice.

It is too often the case that the farmer gives the impression to his children that his business contains hardships seldom or never met with in the other occupations of life, and the advantages are not mentioned. He should be induced to magnify his calling. If all tillers of the soil would look about them to see how they can secure better returns for the expenditure of their energies and while adding to their incomes, add to the health, comfort and happiness of the family, the boys would have more love for the farm and its occupation. The people better appreciate the business of the farmer every year and the government is already doing much to provide him with better methods but not half as much as the importance of the subject demands.

Over seven hundred thousand dollars were given from public funds for the support of experiment stations in the United States last year. Large as this sum may seem it is only a little more than a cent for each of our population. We have over forty experiment stations and nearly four hundred trained men constantly seeking for ways of increasing the products of the farm at less expenditure of both money and labor. These stations have accomplished already that which will enable the farmers to greatly increase their annual income. The scientific principles discovered at the stations and disseminated by the institutes and pomological meetings ought not only to enlarge

the farmer's purse but also to increase his love and reverence for the nobility of his calling.

Let the boy understand that the farmer is a manufacturer, the elements of plant life in the soil or in the fertilizers applied constitute his raw material, and that his finished product is neither toy nor ornament, but that which God intended should be used by man to subdue the earth and extend our civilization.

No gainful occupation in which man can engage is so calculated to develop an acquaintance with and reverence for the Creator as that of planting the seed and cultivating plant, fruit and flower. Said Mr. Barker, a year ago, I never cover a seed and watch its development without feeling grateful that my attention was ever called in that direction.

Every young man who is about to decide upon an occupation for life should consider very carefully the effect his occupation must necessarily have upon the mental, physical, and moral development of his family. There is no fact in history more certainly proven than that the farmer's son has far more chances of success than the son of the city merchant, banker or lawyer. He is surrounded by far less that is evil and he must receive some inspiration from the violet upon the ground, the butterfly in the air, the bird in the tree or the star twinkling above him. All of these have a voice that speaks to his soul from another land. It has been beautifully said, "Every flower is a tender thought, every field a beautiful picture, and every forest a fairy land."

A boy brought up on the farm who is industrious, thoughtful and inquisitive, finds in his occupation a liberal education. No business is more calculated to develop both mind and muscle, consequently we find nearly all the leaders at the bar, upon the rostrum and in the pulpit began life in the country. Volumes might be truly written to show the advantages of life devoted to agricultural pursuits, and could a large part of the mechanics, artisans and operatives but know how much more of all that is worth living for can be obtained upon the farm than in the city, we should hear no more of deserted homesteads, and the problem of vacant farms would find an easy solution.

Every day I become more and more convinced of the great advantages to be derived from institutes and societies of this character where we can come together and learn of each other the latest discoveries, the best methods and go home better prepared to prosecute

our labors and to appreciate our work. When we realize the real blessings of rural life, and what the farm may be made to yield of comforts and enjoyments, as well as profits, and do what we can to interest the boy, it will take more than the allurements of the city to induce him to leave his home.

Unfortunately, it has been thought by some that any one knows enough for a farmer. No greater mistake could be made. No occupation in the world needs more intelligence and none is more conducive to education in its best sense or better fits a man to discharge all the duties of life than conducting the varied business of the farm. He enters into partnership with nature to manufacture from the elements of the soil and air, the magnificent fields of grain, the trees and bushes loaded with the luscious fruit, and those animals which graze upon our many hills, all of which are calculated to strengthen both mind and body, and give happiness to the soul.

To enter into business with such a partner for such a purpose, ought to give a man a thousand times more self-respect than to weigh out sugar and nutmegs, or to measure off calico at five cents a yard.

A few years ago a Mr. Lyon and his son came to my farm in the West to buy some steers. Upon looking them over carefully himself he said to his son, John, look them over and see if we can afford to pay that price. I said to him, "I am glad to see that you consult your son in matters of business." He replied, "He is young now but we are both rapidly growing older, and I shall soon pass off and want him to be accustomed to the business." There was no question about that son remaining on the farm.

Mr. Ellis of Belfast, one of the most successful farmers in the State, has two sons who approached him when quite young with the request that they might keep some sheep. He said, "Yes, you may keep as many as you wish on this condition, that you accurately weigh all you give them, both hay and grain, so you can tell me every week just how much they are costing you, and consequently at the end of the year you can tell me what you have gained or lost."

By such treatment those boys soon learned to take an interest in the farm and early acquire the habit of conducting their affairs in an accurate, business-like manner, which not only secured in them a love for the business, but made success doubly sure.

Unless a man's account shows a reasonable amount on the right side of the ledger at the close of the year, he cannot expect to make farming attractive to the son, or long expect him to remain at home.

To enable him to make his business profitable and satisfactory, nothing will do so much as the cultivation of fruit. How much is annually lost by neglecting the cultivation of apples, pears, plums, berries and grapes. Nothing a farmer can do will add so much to the comfort, happiness, health, and contentment of his family as a succession of all these fruits every day in the year; and the profits in the culture of fruit in Maine far surpass that of anything else cultivated here or elsewhere. Berries can be profitably raised at five cents a quart, they are far more profitable, in fact, at that price than hay, corn or potatoes, and the Maine producer is surrounded with markets offering twice or three times that price.

To the profits of the orchard when properly cared for, there is hardly any limit. I know a King apple tree of moderate size, which has not borne less than two barrels any year during the past five, and there are many other trees in the same neighborhood that do nearly as well. The only difference between this tree and others of the same sort is in the cultivation. An acre of such trees would produce at least one hundred barrels.

In an item published in two of our agricultural papers it is stated that a farm of only thirty acres produced about thirteen hundred dollars worth of grass, grain, vegetables and fruit. This was a good result for one man, better than is usually obtained; but two-thirds of this came from three or four acres of orchard and the other third from the remaining twenty-six or twenty-seven, and he probably put five times the labor on the rest of the farm that he did upon the orchard. Were twenty acres of his farm in apple trees, and well cultivated and fertilized, his income would have been four thousand instead of thirteen hundred dollars.

How easy it would be for three-fourths of our farmers to have twenty acres of good apple trees and receive at least an annual net income of fifteen hundred dollars a year. This is just as certain as it is that he could raise one hundred bushels of potatoes or twenty bushels of wheat. But, say some, "I know many orchards that do not yield a quarter of that amount." So do I, orchards where the trees are starving and in a few years will starve to death.

I examined an orchard a few months ago which had been set two years on land that would not produce five bushels of corn an acre without dressing, and the trees had received neither dressing, mulching, nor care of any kind. Fifteen or twenty years hence half or two-thirds of those trees will be alive and begin to bear a few scat-

tering apples and that farmer will conclude that the profits in orcharding are all a humbug, and the boys will leave the farm to clerk in a store, work on a railroad, or peddle fish.

I have nothing to say of the profits of a neglected orchard. Profits usually turn to loss in any kind of business when neglect takes the place of care. Many of our farmers never fertilize the orchard at all and almost none enrich it enough. The time of half feeding any crop is fast passing away, and its exit should be hailed with delight by us all. No crop will pay better for a generous supply of food than the apple.

FIGURING FOR RESULTS.

Of the profits of orcharding in Maine the half has never been told. There is no way in the world in which a young man can lay the foundation for future wealth with so little risk as by fruit raising in this State. Suppose he secures a piece of land and sets every spring for ten or fifteen years one hundred of the best apple trees he can procure, tills and dresses them in the best manner, what will be the cost and what the result? The cost of the hundred trees, setting and care for the same, could be spared by almost any young man who is saving and industrious, and at the end of ten years the trees would begin to bear, and before he has arrived at the meridian of life his orchard would yield a splendid income and be worth a handsome fortune.

Such an undertaking has every element of success. The risk is reduced to a minimum; it can be accomplished at or near the home of his childhood, and the business is healthful to both body and soul. If he wished to make fruit culture his whole business from the beginning, he could unite with his orchard small fruits, and if this is properly done after the first or second year, he could make more from them than he could in the shop or factory, and it would be almost infinitely more satisfactory.

Parents should remember that the boy will soon be a man, and a little influence brought to bear upon him in the right way may make the difference between a successful and a ruined life. We should early give him something to rear or cultivate of his own.

How admirably this can be accomplished by giving him a piece of land, assisting and teaching him to cultivate small fruits, plums, pears and apples. He will have more interest in the farm, learn the

ins and outs of fruit culture, furnish himself with clothes and partly, at least, pay the expense of an education.

Most parents have a laudable desire to leave some of this world's goods to their children. What better way could be devised than to plant a few apple trees for each one of them every year, and see that they have proper care. A little expenditure of this kind wisely made will soon grow into a handsome property.

We too often lose sight of the fact that the boy of to-day will be the man of to-morrow, and no one can over-estimate the importance of the influence brought to bear upon the youthful mind.

The farmer is quick to learn the effect of early training upon the horse, and knows full well that his future usefulness largely depends upon the treatment he receives the first few years. How much more important, then, should be the early instruction of a young mind capable of accomplishing so much of either good or evil in this world, and when done with this life is destined to enter upon another of endless duration.

However much agriculture be depressed in other parts of the world, the farmer of Maine who will make an intelligent use of his opportunities, has a bright future before him. If he will combine sheep husbandry or dairying with fruit culture and conduct his business with intelligence, system and energy, his bank account will constantly surprise him by its growth. There will be no need of over-work for himself, wife or children, and if in the treatment of his family he will ever bear in mind that after a few more shifting seasons, his boys will be men and he will enter his second childhood, he will find health and happiness in his household and have no fears that his children will desert the homestead.

What a grand opportunity we have to boom this State! If a few people would only take hold of the subject with the same faith and perseverance that the people of Sioux City did year after year with their corn palace, the State of Maine might double its agricultural wealth in a short time.

Every one here who has given any study to the subject at all, knows that there are untold possibilities in apple raising in the Pine Tree State. One hundred dollars wisely expended in setting apple trees, will, in a few years, become a thousand.

There are in the State nearly sixty-five thousand farms, averaging a little more than a hundred acres each. If there were set on an average during the next few years ten acres of the best apple

trees to a farm and properly cared for, in fifteen years' time they would pay for all the cost and be worth two hundred dollars an acre, and the combined value would be more than all the farms of the State at the present time. The product of these trees would be greater than the yearly agricultural products of Maine. Over-production, exclaim some, but before fifteen years have expired the farmer will know nothing of over-production in any line of agriculture. We do not realize how fast the demand increases. As men grow wiser the consumption of fruit increases much faster than the population, and ere another decade is gone a large part of the money now paid for patent medicines, will be exchanged for berries, pears and apples. There will be twelve hundred thousand people more in the United States to eat the next apple crop than there were to eat the last, and in fifteen years' time we shall add to our population sixteen million fruit consumers, who with their increased wisdom in regard to diet, will do away with all fear of over-production.

CONDENSED FRUIT LIST.

The following condensed list of desirable varieties is substantially the same as published in previous years. As it is based on actual results in fruit growing in Maine, it will bear careful study on the part of those who are seeking information as to what varieties to set. Fruit growers are urged to report to the secretary on any other varieties that are especially deserving. If you know anything of the newest varieties, give the State the benefit of the information.

Those printed in *italics* are considered the best in quality and those followed by a star (*) are the most profitable.

To answer numerous inquiries we append descriptions of a few varieties of fruit. With one or two exceptions they are the newer varieties and not described in the standard works on fruits. We are indebted to Ellwanger & Barry for these descriptions which are copied almost entire from their general catalogue.

APPLES.

SUMMER—Duchess of Oldenburg, *Early Harvest*, Golden Sweet, *King Sweet*,* Large Yellow Bough (sweet), *Red Astrachan*,* *Russell*, *Tetofsky*, *William's Favorite*.*

AUTUMN—Alexander, *Deane*, *Fumeuse*,* *Garden Royal*, Gloria Mundi, *Gravenstein*,* Montreal Peach, *Munson Sweet*, *Porter*, *Pound Sweet*,* Somerset, Wealthy.

WINTER—Baldwin,* Granite Beauty, Harvey Greening, *Hubbardston Nonsuch*, *Jewett's Fine Red*, *King Tompkins*,* *Milding*, *Rhode Island Greening*,* *Rolfe*, *Stark*, *Talman's Sweet*,* *Yellow Bellflower*, *American Golden Russet*.

For trial, McIntosh Red, Minister.

LATE WINTER—*Northern Spy*,* Roxbury Russet.*

During the past few years the Ben Davis has been one of the most profitable apples raised in the State. It "stands up" well in shipping, and is said to be improved by crossing the Atlantic. There are several other varieties that might be placed in the same list. The Society is unwilling to recommend them by placing them on the Condensed List, on account of their inferior quality. It is believed sooner or later, as better shipping facilities are provided for fruit, that it will not pay to send abroad any apples that are not among the best in quality.

AROOSTOOK COUNTY—From reports received there are several apples that thrive here, among which are Red Astrachan, Duchess of Oldenburg, Fameuse, Alexander, Wealthy, Yellow Transparent, Dudley, Montreal Peach.

DESCRIPTION OF VARIETIES.

RED BIETIGHEIMER—A rare and valuable German variety. Fruit large to very large; roundish, inclining to be conical; skin pale, cream-colored ground, mostly covered with purplish crimson; flesh white, firm, sub-acid, with a brisk, pleasant flavor. Tree a *free* grower and abundant bearer. This is one of the largest and handsomest apples. Early fall.

STUMP—Originated near Rochester. Fruit medium size, conical; skin yellow, striped and shaded with light red; resembles Chenango; flesh firm, crisp, juicy, tender, sprightly, sub-acid. Considered an acquisition to desirable market and garden varieties. Tree of handsome, stocky growth and prolific. September and October.

TETOVKA (Titus Apple)—Origin, Russian. Large; three and one-quarter to three and three-fourths inches in diameter; roundish, tapering slightly to crown; color, greenish yellow ground, striped and marbled with light red in the sun; when fully ripe, the ground is yellow, and the red deep and dark, mostly covering the fruit, and usually a light bloom; flesh rather coarse, tender, juicy, very mild acid; quality not high, but good. Tree a free grower and productive. Foliage very large. Ripe in September.

PEARS.

SUMMER — *Bartlett*,* *Brandywine*, *Clapp's Favorite*, *Osband's Summer*.

AUTUMN—*Belle Lucrative*, *Beurre Superfine*, *Eastern Belle*, *Goodale*, *Louise Bonne de Jersey*,* *Nickerson*, *Seckel*, *Sheldon*.

WINTER—*Beurre d'Anjou*,* *Lawrence*.

For trial, *Josephene of Malines*.

DESCRIPTION OF VARIETIES.

MARGARET (*Pelite Marguerite*)—Medium size; skin greenish yellow with brownish red cheek, and covered with greenish dots. Flesh fine, melting, juicy, vinous, and of first quality. Tree a vigorous, upright grower, and an early and abundant bearer. Succeeds as a standard or dwarf. The finest pear of its season. Ripens latter part of August.

FREDERICK CLAPP—Size above medium; form generally obovate; skin thin, smooth, clear lemon yellow; flesh fine grained, very juicy and

melting; flavor sprightly, acidulous, rich and aromatic. Season, October 15th to November 1st. Tree a vigorous or free grower and somewhat spiny.

COL. WILDER—One of Fox's seedlings from California. Large, pyriform, oblong, inclining to oval; stalk set without depression; calyx very shallow, open or half open; skin yellow, profusely dotted and marbled with russet; flesh melting, full of juice, sweet; a delicious pear; keeps till March. A fair grower.

THE IDAHO PEAR—At the annual meeting of the British Columbia Fruit Growers' Association for 1891, Mr. George W. Beebe read a paper on this recent introduction. As yet not enough is known of the Idaho pear to pass judgment upon its merits, but many nurserymen are offering the tree to the public. So far as the tree has been tested in Maine it has proved to be perfectly hardy. From this paper the following is clipped:

Nearly a quarter of a century ago Mr. and Mrs. Mullkey, then residents of Portland, Oregon, concluded to try their luck in a new country. Amongst other things Mrs. Mullkey took with her four pear seeds that she had taken from a single species of pear, the name of the variety being unknown to her. So that the parentage is clouded in mystery. A spot of ground for the future home was selected on a piece of sage brush land, near the banks of the Clearwater river, in what was then known as the Territory of Idaho; here Mrs. Mullkey planted the four pear seeds she had taken with her, but one of the four seeds germinated, which grew nicely and in the short space of four years produced its first crop of fruit, and though the parentage of the Idaho is in doubt yet there is no doubt whatever regarding the foster parent, for the new variety immediately took upon itself the name of its guardian and was known as the Mullkey Pear. Some years later the Mullkey place passed into the hands of a Mr. Lindsay who is now the happy possessor, and with it went all interest in the Mullkey Pear, and for a time at least the name was changed and it was known as the Lindsay.

A few of the admirers of the then Lindsay Pear, in 1886, believing that there was a great future in store for this new attraction, concluded to organize what is now known as the Idaho Pear Company for the special purpose of distributing the stock. The company thinking that more than a local name would be desirable re-christened the Mullkey-Lindsay to the Idaho Pear.

While it is generally conceded that the Idaho is superior to the Bartlett in nearly every particular, yet it will hardly be a rival to that variety, as its season of ripening is nearly a month later; it will fill a place of its own. In size it will compare favorably with that standard, the Bartlett, and may be ranked as large, specimens having been grown exceeding a pound in weight. The shape is peculiarly its own, no pear approaching it except a pear of French origin known as the Crassane, and while there is some resemblance in this particular, yet Simon Bros., of Metz, and other authorities on pomological matters, who had tasted the Idaho, have stated

that there is nothing in common between the two. In color it would be difficult to imagine a more beautiful fruit well ripened, being a golden yellow slightly tinged with red, not glaring in appearance, but of that peculiar blending of color that makes it especially attractive, but with its unusual attractions in color and size the flesh is firmer than the Bartlett, with a flavor, so far as my judgment goes, surpassing that of any other variety. The growth of the tree is very similar to the Bartlett, in fact, so much so, that I think it would be difficult to distinguish any difference between the two varieties. I noticed last spring that it was much later in coming into leaf than any other pear I have, and I have reason to believe from information obtained from other sources, that this is only another peculiar thing in its favor, as in some places where all the fruit buds have been killed on account of late frosts, the Idaho coming into leaf so much later has shown no sign of injury; in fact, Mr. Evans states that while the Bartlett and other pears were nearly all barren last year owing to late frosts, the Idaho had nearly a full crop of fruit.

PLUMS.

Bradshaw, Greely, *Green Gage*, Jefferson, Kingston, *Lombard*,* *McLaughlin*, Moore's Arctic, Niagara, Pond's Seedling, Prince's Imperial Gage, Purple Gage, Rivers' Blue Prolific, Shropshire Damson,* *Washington*, Yellow Egg.

DESCRIPTION OF VARIETY.

ORANGE—Large; skin bronze yellow, marked with roughish white dots, and clouded with purplish red; flesh deep yellow and juicy. Tree vigorous and productive. [Some of this variety has found its way into Maine as the *Green Gage*. It is easily distinguished by being yellower and later. It is by far the best plum for preserves and canning we have yet tried. D. H. K.]

CHERRIES.

Black Heart, Black Tartarian, *Common Native*, *Early Richmond*, Governo: Wood, Mayduke, Ox Heart, Rockport.

THE SMALL FRUITS

STRAWBERRIES—*Crescent*,* Downing, Kentucky, Manchester,* *Sharpless*, Wilson. The following are recommended for trial,—*Bubach*,* Pineapple, Ohio,* Belmont, Haverland,* Cloud.*

Those in *italics* are early, and those marked with a (*) are pistillate and require some of the perfect-flowered varieties set near them to pollenize the flowers.

DESCRIPTION OF VARIETY.

PARKER EARLE—A new berry, originating in Texas, and named in honor of a distinguished horticulturist; uniformly large, regular, conical with a short neck; color, glossy scarlet crimson; ripens all over; flesh moderately firm, no hollow core, quality good; flowers perfect, always setting perfect fruit. Plant very vigorous, healthy and remarkably productive. It is said to have yielded at the rate of 15,000 quarts to the acre. It is considered a very promising new variety. Season medium to late.

RASBERRIES—*Red*—Cuthbert, Turner; *Yellow*—Golden Queen; *Black*—Gregg. Ada and Carmen are recommended for trial.

BLACKBERRIES—Snyder, Agawam, Bangor.

CURRENTS—*Red*—Fay's Prolific, Red Dutch, Victoria; *White*—White Grape; *Black*—Lee's Prolific.

GOOSEBERRIES—Downing, Houghton Seedling. Smith's Improved and Industry are recommended for trial.

GRAPES—Brighton, Champion, Delaware, Hartford Prolific, Lady, Moore's Early.

From T. S. Hubbard & Co.'s pamphlet "On Grape Vines and Small Fruits," we select the names of a few of the earliest grapes, and arrange them in the order of earliness; those printed in *italics* are regarded by them as the best in quality; the figures refer to hardiness of foliage and vines, the lowest numbers being the hardiest. Several published in their list are hardier but are later, hence none in the list are hardier than those marked "2."

Jessica (3), *Champion* (3), *Dracut Amber* (2), *Moore's Early* (2), *Cottage* (2), *Lady* (3), *Lindley* (4), *Massasoit* (4), *Hartford* (3), *Hayes* (3), *Worden* (2), *Brighton* (4), *Wyoming Red* (2), *Salem* (5), *Delaware* (3).

THE SECRETARY'S PORTFOLIO.

CONTAINING

Original and Selected Scraps, which, it is hoped, may
be found helpful to Maine Fruit Growers.

Tree; *themselves* are ours ;
Fruits are born of flowers ;
Beech, and roughest nut were blossoms in the spring ;
The lusty bee knows well
The news, comes pell-mell,
And dances in the gloomy thicks with darksome antheming ;
Beneath the very burden
Of planet-pressing ocean
We wash our smiling cheeks in peace—a thought for meek devotion.

LEIGH HUNT.

WINDOW-GARDEN DEPARTMENT.

A NEW WORK IN MAINE.

At a meeting of the executive committee held the day following our winter meeting in Cornish, the plan of window-gardening as outlined by the Secretary was approved and referred to President Pope and the Secretary for such action as they thought best. After correspondence with the committee of the Massachusetts Horticultural Society and interviews with various parties in Maine, it was decided to undertake such work in connection with our 1892 exhibition.

Under date of March 30, 1892, the following article appeared in the *Lewiston Journal*:

To the Editors of the Lewiston Journal:

At the annual winter meeting of the Maine State Pomological Society recently held in Cornish, the writer urged upon the society the importance of doing a broader educational work; that however much of recreation and traffic the agricultural fairs may afford, the only plea offered for their support is that in some way they are educational. There may be many things that cluster around the fair to amuse and entertain the crowd but in some way that will be beneficial to the public, the managers are in duty bound to make the fairs educational. And the public have a right to insist that this shall be done.

It has been the purpose of the officers of the Pomological Society to make this educational work broader in its exhibitions, so that all who visited the department might gain some knowledge of fruits and flowers. Nor has this been all; they have even attempted to make their hall attractive and pleasant. They have tried to have the exhibition kept in good order, and have even essayed to make it beautiful. That more has not been done is no fault of theirs, as the funds would not permit more in this direction.

A movement has been going on in the State for several years to introduce the study of agriculture in the public schools. The idea

is a good one, and as the flora of the State is directly or indirectly the source from which nearly all the food of man or beast comes, the society offered premiums for correctly named collections of wild flowers made during the season. It is proposed this year to extend this work and invite the high schools of the State to compete, some premium being given to the school making the best collection of correctly named Maine flowers.

For several years the Massachusetts Horticultural Society has done an excellent work with the children of Boston through its efficient committee on window gardening. Potted plants are given to the children in the spring to be taken to their homes and cared for during the season, and in the autumn these plants were exhibited by the children, who were awarded small and suitable prizes. The plan at first was received with indifference and, but for the enthusiasm of a few friends, would have been defeated. The first season there was a general exhibition in Horticultural Hall, but the popularity of the work has necessitated the past few years several exhibitions in different parts of the city, the better to accommodate the large number of children who wished to take part in the exhibition.

By this plan many a child has learned to love plants and flowers by being taught to care for them, and many a desolate home has been made more pleasant by a plant or two in "training" for the exhibition.

The work of this committee has been still further extended, and special premiums under its direction, have been awarded for window gardens.

Although the Pomological Society has only limited means, the executive committee have decided to undertake a similar work in Lewiston and Auburn the present season, an equal number of plants being distributed to children twelve years of age or less. Superintendents Stuart and Stetson have kindly promised their co-operation in placing the plants in the best hands for the purpose. The children receiving the plants will be expected to care for them during the season and have them ready for exhibition at the park during the fair in September.

Each child who brings a plant for exhibition will receive a ticket admitting him or her to the fair on Children's Day. After the exhibition is over the plants will be returned to the children.

Prizes will be offered for the best plants and a committee will be chosen to examine the plants and make awards. Further details will be announced through the schools.

The society has only limited means with which to make a beginning in this work of interesting the children of Lewiston and Auburn in plants and flowers. But kind friends are offering assistance. President Pope writes that he will furnish one hundred coleus and fifty fuchsia plants. L. F. Abbott of the *Lewiston Journal* offers one hundred geraniums and ten yearly subscriptions to *Vick's Magazine* to be awarded as premiums.

Dr. George M. Twitchell, Secretary of the State Agricultural Society, gives \$10 to be used in premiums. D. H. Knowlton & Co. will give twenty yearly subscriptions to one of their popular periodicals for premiums. The society will assume the care of the plants at the proper time and return them to some place designated for the purpose, furnish printed directions, and if necessary increase the number of plants. It is hoped other friends who would like to see more of this sort of work done in connection with the fairs will furnish more plants for this purpose, as well as to increase the premiums. It will be the effort of the officers to make faithful application of such funds and do all in their power to interest the children in the study of plant life.

Any contributions other friends may desire to make, either for plants or premiums may be sent to the Secretary at Farmington. All such will be acknowledged in the *Journal*.

D. H. KNOWLTON,

Secretary Maine State Pomological Society.

In the *Journal* in which this article was published there appeared the following editorial upon the subject:

CHILDREN AND FLOWERS.

"In another place will be found a communication from the secretary of the Maine State Pomological Society, regarding a new feature it is purposed to introduce, as an experiment into the work of the society. This feature of giving away plants to children of Lewiston and Auburn, to be trained and cared for by them and presented for exhibition and prizes next fall at the State Fair, is a new departure in the right direction. The project has the fullest sympathy of the *Journal*, which will extend a helping hand to further the object in every way.

“Through the love of the beautiful in both nature and art the individual is led to embrace higher ideals of those graces which adorn true manhood and womanhood. The cultivation and companionship of flowers brings the boy or girl who engages in the simplest form of floriculture, into touch with nature whose every form of loveliness in leaf or flower and distilling fragrance, breathes of purity and goodness.

“To President Pope and Secretary Knowlton are due, mainly, the fine arrangement in the floral displays which have hitherto graced the exhibition in the pomological department of the State Fair in years past. This new departure which Secretary Knowlton has presented, it is hoped will meet with such a response in the way of verbal encouragement at least, from the citizens of Lewiston and Auburn, whose boys and girls it will directly benefit, that such a spirit of emulation shall be engendered among the children, that our floral exhibition next September shall mark an era of progress in this, the poetry of gardening, hitherto unapproached.”

Arrangements for the distribution of plants were perfected through the courtesy of Superintendents Stetson and Stuart, and June 7th the children received the plants, about 350 in all, each plant bearing the name of some child, a number and directions to preserve the tag and bring it and the plant to the place designated to receive them. The following circular was issued to the children receiving plants:

WINDOW-GARDEN DEPARTMENT.

At first the officers of the Society were very much in doubt about the possibility of accomplishing very much in a new department—an experiment in Maine at any rate. Friends kindly offered money, premiums and plants, and assurances came that the children of Lewiston and Auburn would just delight in taking part in this kind of work. They enjoy flowers, and if they can only have a chance, will show the people of Maine how they can grow plants for the Fair. The Trustees of the State Agricultural Society readily consented to furnish free tickets for Children's Day to those who bring plants.

There are three ideas in particular that have especially prevailed in undertaking this department: *First*, a larger number of plants on exhibition will make the hall more attractive and interesting to the public. *Second*, the Society is always ready to encourage the growing of flowers,—they are sources of unbounded pleasure to those

who cultivate them. Should a few children be taught to care for plants and raise flowers, none can tell the pleasures in store for them. Again a little knowledge of plant life gained by the care of a few plants will lead to the study of others, and from these to the study and enjoyment of other objects in nature, up to the Great Source of Life. *Third*, a Children's Day at the Fair will certainly be a pleasure to some, and the officers will spare no pains to make the day pleasant to those who may visit this department at the Fair.

CARE OF THE PLANTS, ETC.

SOIL.—Many of the plants will need to be re-potted at once. The best soil for the purpose is a rich garden loam, to which add one-third well rotted stable manure, well mixed.

POTS.—The best are the common unglazed kind with saucers. Those that are painted or glazed are not desirable for flowering plants; when these are used extra care should be taken to secure good drainage from the bottom. Before filling the pots with soil a little charcoal and some broken bones will be found very acceptable to the plants, which will soon cover the bone with a net-work of tiny roots.

TREATMENT.—Plants are often injured by too frequent waterings. A safe rule is to apply water only when the surface is dry, and then put on enough to thoroughly moisten the soil. Some plants require more water than others, and the same plant at times will require more water than at other times. Sometimes they may need water every day; at other times several days may go by before the soil calls for more water. Careful attention is all that is required.

The leaves are the lungs of the plants, and it is necessary that the pores of the leaves be kept open if the plants are kept in healthy condition. In view of this, if the plants are kept in-doors or in dusty places out of doors, they should be washed frequently. A rubber sprinkler may be used for this, or a garden sprinkler; or if one does not have either, a whisk broom may be used. This sprinkling also keeps off the insects and makes the plants more hardy.

Have the pot clean, trim the plants often, take off all dead leaves and observe the other directions given, and you may be sure of beautiful window plants. The plant should stand up straight, the earth in the pot should be entirely free from weeds, and all stones and other unnecessary matter should be removed.

THE PLANT EXHIBITION.

On Monday, September 5th, the plants are to be delivered at some place which will be announced later. A team will be in readiness to take the plants to the Fair Grounds, and after the Fair, Saturday, the plants will be returned, and the owners should call for them that day. A free ticket to the Maine State Fair, Children's Day, will be furnished to every child who brings a plant properly tagged to the place announced Monday, September 5th.

It is expected that each child who receives a plant will take good care of it himself. Others may offer suggestions, but the child should care for the plant. It is also expected that every plant will be exhibited at the Fair.

The premiums to be awarded consist of \$10 in cash contributed by Dr. Geo. M. Twitchell, Secretary of the State Agricultural Society; twelve annual subscriptions to Vick's *Floral Magazine*, contributed by Mr. L. F. Abbott, Agricultural Editor of the *Lewiston Journal*; and twenty annual subscriptions to the *School World* or *School-Days*, contributed by D. H. Knowlton & Co., Publishers, Farmington.

It is the hope of the officers of the Society that the children will enjoy the care of the plants, learn much of plant life, how they grow, what makes them grow. They also hope they will take so good care of the plants that they will be proud of their contribution to the success of our annual exhibition.

D. H. KNOWLTON, *Secretary*.

Farmington, Me., June 8, 1892.

We are indebted to the *Lewiston Journal* and *Auburn Gazette* for numerous notices of the work going on in this department. We are also indebted to the enthusiasm to Miss E. T. Simmons and her associate teachers in Auburn and to the Lewiston teachers for their co-operation in our window-garden department. The plants are now in the custody of the children and it remains to be seen how much will be accomplished this year. We are quite sure the children will try to do their part, and we have every reason to suppose the plan will prove a good one and meet with the approval of the public.

THE DISTRIBUTION OF THE PLANTS.

One of the prettiest scenes of the week was the distribution of plants to the little school children of Lewiston and Auburn.

This was in accordance with the published plan of the State Pomological Society, and the enthusiasm of the children, the joy with which they received them and the tender care they seemed to lavish on them were among the beautiful features of this thoughtfulness on the part of the society. Of course this is with a purpose, and that purpose is to instil into the children a love of window gardening. On the principle that, as the twig is bent the tree is inclined, none are given to children over ten or at most over twelve years of age, and they are to enter a competition to be decided at the State Fair, where all plants are to be returned and entered for show and prizes awarded. On a June day, the vision of hundreds of little folks bearing home plants to love and rear in tenderness, was a thing to remember.—*Lewiston Journal*.

MAINE'S WILD FLOWERS.

In order to encourage the study of wild flowers in the schools of the State, the following circular announcing the wild flower premiums offered by the society was mailed to the principals of the High Schools in the State:

To the High School Principals of Maine:

Your attention is most earnestly invited to the following premiums offered by our Society for individual and class work in botany the present season. The object of the Society in offering these premiums is to encourage the study of the natural sciences in the public schools of the State, more especially in their relation to agriculture. The members of your school are cordially invited to compete for these premiums. Will you not kindly use your influence in behalf of this object? Perhaps it ought to be added that what follows is taken from the Society's premium list for 1892, and that the competitors will be expected to exhibit specimens at the State Fair in Lewiston, in September next.

SPECIAL PRIZES.

	1st.	2d.	3d.
200 For the best exhibition of cut wild flowers in pots, each variety to have correct botanical and common names attached, not less than forty kinds.....		\$3	\$2

- | | 1st | 2d | 3d. |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----|-----|
| 201 For best exhibition of pressed wild flowers, collected in Maine during the season of 1892, each variety to have correct botanical and common names attached, not less than fifty kinds, | \$4 | \$3 | \$1 |

FOR THE HIGH SCHOOLS IN MAINE.

- 202 For the best collection of correctly (botanically) named wild flowers, made during the season by any High School in Maine—a household microscope, suitable for school use.

For this premium entries must be made on or before September 1st with the Secretary, and the specimens must be in place on Tuesday, September 6th. In case the exhibitors cannot bring collections themselves, they may be sent to D. H. Knowlton, State Fair Grounds, Lewiston, at the Society's expense, and after the exhibition is over they will be packed and returned to parties sending them.

The specimens in this collection by individual pupils may also compete for premium No. 201. For mounting specimens note "Directions for Mounting," etc.

In awarding premium the committee will have regard to (1) correctness of names, (2) number of specimens and varieties, (3) general appearance of specimens and excellence of the work of the pupils.

It is not necessary that there should be more than one specimen of any species, though the collection as a whole should represent the work done by the school.

DIRECTIONS FOR MOUNTING SPECIMENS.

The specimens, so far as possible should show the whole plant and be carefully pressed before mounting. The specimens when dried may be kept in folded sheets of book paper; or they may be fastened by mucilage or slips of gummed paper to sheets one-half the size of the folded sheets, in which the specimens are loose. The sheets should be of uniform size—that recommended by Gray is $16\frac{1}{2} \times 10\frac{1}{2}$ inches—the folded sheet, of course, being $16\frac{1}{2} \times 21$. Two plants should not be attached to the same sheet. In the lower right-hand corner, either on the sheet, or on a slip pasted to the paper, write the botanical name, the date, the locality, etc., and the name of the collector. These directions apply with equal force to Nos. 201 and 202.

Address,
FARMINGTON, Me.

D. H. KNOWLTON, *Secretary*.

APPROVED VARIETIES OF STRAWBERRIES.

Mr. L. J. Farmer in an excellent paper on "Strawberries" presented to the Western N. Y. Horticultural Society the following data regarding varieties. They are too good to lose and we give them a place in the Secretary's Portfolio :

Soil, climate, mode of culture and other causes determine the value of a variety for any special location. Most varieties do best in the locality where they originate. A few seem to do well everywhere. Pistillates are usually more productive and hardy than hermaphrodites, but not always so. Varieties that produce lots of runners do best on sandy or porous soil. When planted on clay they run too much to vines and produce only small inferior fruits. Varieties of slow growth like Sharpless, Bubach and Wilson, that make large plants and few of them, do best on a soil made up largely of clay. Most varieties do best in a moist season but Haverland, Parker Earle and a few others seem to prefer a dry season. There are varieties that will stand almost any amount of fertility and produce correspondingly large crops. Other varieties require only a moderate amount of fertility and run to vines if too highly enriched. This only goes to prove that in order to be always sure of a crop, we must grow several varieties. Before accepting the advice of anyone as to which is the best variety to plant, the grower should first see that the conditions are the same. For instance, our soil is a stony loam while the soil at the Geneva, N. Y. Station, is a tenacious clay loam. Varieties that are a success with us are often a failure at the Station and vice versa. No one can accurately decide as to the merits of a variety from one year's test. It takes at least two different seasons and often more.

The six best varieties among those that have been thoroughly tested at our place are Warfield, Haverland, Michel's Early for early, and Eureka, Parker Earle, and Burt for late. These six meet all wants with us.

Warfield resembled Crescent in growth and Wilson in fruit. The berries are of a dark color, very glossy, and sell up with the largest varieties on account of their beautiful color and firmness. The plants are very small when young, but have great vitality and by fall cover the surface. This variety with a proper fertilizer takes the place of both Wilson and Crescent.

Haverland endures the drouth better than any other variety we grow; but in a wet season the fruit is all water and won't stand shipment. In a dry season like the last one, this berry will pay best of all on account of its great productiveness, size and fine appearance. It ripens early and continues until very late.

Michel's Early ripens first of all. It is valuable on account of its extreme earliness and as a pollenizer for early pistillates like Warfield and Haverland. It is very productive of berries the size of Crescent; but towards the close of the season they appeared as if rolled in road dust. Whether a trait of the variety or caused by drouth we do not know.

Eureka is the best late market strawberry. It begins to ripen as the early varieties begin to fail and continues until all others are gone. The berries are extra large, firm and of a bright glossy crimson, the ideal strawberry color. Plants are good size, very vigorous and productive. For fertilizing this use Burt or Parker Earle.

Burt is an ironclad in every respect. We have recommended it as the best variety for wet soils and wet seasons, but the last year's experience proves it one of the best for dry seasons. Berries are fair size, round and very firm. Even after long continued rains they carry well to market. It lacks flavor, however, and should not be grown for fancy tastes.

Parker Earle should have more admirers among those that are well posted on varieties than any other variety. No one can see a row of this variety in fruiting without falling in love with them. The berries are rather long and slim, appearing as if the end had been cut off. The way they are crowded around the plant reminds one of that expression used by introducers of new strawberries, "They lay around the plants in heaps and piles." The berries turn white before coloring red and when ripe are very beautiful, covered with golden seeds. It is not as firm, large or attractive as Eureka and therefore will not equal it for market; but were I asked to name the best one variety for home use, I should unhesitatingly name Parker Earle.

SULPHURING IN FRUIT DRYING.

Sulphurous gas, which is formed when sulphur is burned, is well known, and constantly used as a disinfecting, bleaching and deodorizing agent, second in virtue only to chlorine. The fact that it is the agent officially used in the disinfection of infected houses, ships and individuals is conclusive on these points. It is, therefore, idle to pretend that sulphuring does not diminish the flavor of fruit or of anything else touched by it. It is perfectly certain that it does so; and the only debatable question is the extent to which it may be used for bleaching fruit without any material detriment to the flavor.

It is in evidence that a reasonable amount of bleaching can be done by applying the gas to the freshly cut fruit without injuring the flavor to a material degree, since the flavor will penetrate from the inside outward to a sufficient extent to compensate for the loss of what naturally belongs to the bleached exterior portion.

The limit, however, is a narrow one, and it is so frequently exceeded in practice (whether intentionally to secure "extra light" color to attract the unwary purchaser or, more commonly, by unskillful or negligent workmen in charge of the sulphuring boxes) as to put upon the market a good deal of fruit that is the reverse of creditable to the State that produces it, and ill calculated to insure a permanent demand. This is especially true of the thinly sliced apples and pears, which are quickly penetrated by the gas and assume a greenish-white tint that, while it may be inviting to equally "green" purchasers, assures the expert that the natural flavor is practically gone. The producer himself declines to put them on his table, but the dealer and the public, as at present informed, are willing to pay an extra price for it. This demand for unnaturally light-colored dried fruit is a "fad" like many others, which will have its day but will inevitably give way, in the course of time, to a preference for the better flavored product having the tint which insures its being so. So long as the "fad" lasts, so long will producers or dealers sulphur the fruit to suit the eye rather than the palate of the consumer. It certainly seems desirable to hasten the advent of a more rational state of the public mind on this point; quite apart from the sanitary consideration, which, if not of primary importance as regards most

of the sulphured fruit now in the market, has nevertheless proved sufficiently potent to cause the practice of sulphuring to be legally prohibited in the old world, where therefore our fruits so treated would fall under the ban of the law. An additional consideration is that this process permits of rendering third and fourth class fruit equal in appearance to the best, and is therefore easily used for fraudulent purposes.

There thus seems to me to be abundant cause for desiring, and working for, the abatement of the public delusion on the subject of light-colored dried fruit, which sacrifices the substance to the shadow and is certain in the end, to inure to the detriment of our dried-fruit trade.

I hope to find a measurably unobjectionable substitute for the uncertain process as now practiced, in the use of a solution of "bisulphite of soda" (heretofore sold under the name of "California fruit salt") of definite strength, into which the cut fruit can be dipped before drying. In this process, the same agent (sulphurous gas) is employed in the liquid form, but so controlled as to the amount used that the chances of overdoing the sulphuring—now so great because of the convenience with which the fruit can be left exposed to the sulphurous gas for an indefinite time—would be reduced to a minimum. The compound can be produced very cheaply, and the solution used will be very weak.

The exact strength and time required to produce the best results with different fruits will form the subject of experiments at the station during the coming fruit season.

E. W. HILGARD.

Director Agricultural Experiment Station, Berkeley, Cal.

FERTILIZERS FOR FRUITS.

An average apple crop of 300 bushels per acre, with the new growth of wood, will take from the soil fourteen pounds of potash and eighty pounds of phosphoric acid per year. Years of study and experiment persuade me that not less than an annual application per acre of twenty-five pounds of potash with some lime and magnesia is absolutely demanded. The relative proportions of these substances need not vary for other fruits. To meet my demands I have evolved the following formula :

Cotton seed meal	200	pounds.
Muriate of potash.....	140	“
Nitrate of soda.....	60	“
Sulphate of ammonia.....	40	“
Sulphate of magnesia.....	40	“
South Carolina fine ground rock (floats).....	70	“
Plaster.....	70	“
		<hr/>
Total.....	620	“

The net cost of these materials at my railroad station last season was \$11 per ton.

—*E. Williams, before N. J. State Horticultural Society.*

SPARE THE BIRDS.

First and foremost of the orchard and garden helpers is the purple martin. It is the general impression that this bird takes insects only on the wing, but it does more than this. I saw numbers of them the past summer, taking the rose bug from the grape vine. They swooped down and picked them off without alighting. They circled around in companies, back again to this same vine, each one snatching off a bug as they passed. Put up boxes for the martins and see that the English sparrow does not get possession.

The oriole is another great helper. It knows how to pull the bag worm from its case and does it systematically and rapidly. The tent caterpillar and fall web worm it also has a liking for; it ruthlessly tears the tents and web to pieces and destroys untold numbers. Allow no gunner to shoot one of these beautiful, gaily dressed

birds on your premises, not even if the lady of your choice is pining for the skeleton to perch on her hat.

The cat-bird and the red-eyed vireo, both eat the unsavory pear slug. But it is not necessary to mention the good service rendered by our more common birds, such as the robin, brown-thrush, blue-bird, and wren, as all have seen their good works.

Horticulturists are aware of the good that they do. Our winter birds are also showing good work. The seed eating ones, pick up great quantities of seeds of noxious weeds, while our woodpeckers, jays, and chickadees are constantly on the lookout for hibernating insects. Spare and encourage the birds, both winter and summer, about homes, grounds and fields.

Longfellow says :

You call them thieves and pillagers ; but know
They are the winged wardens of your farms,
Who from the corn-fields drive the insidious foe,
And from your harvests keep a hundred harms ;
Even the blackest of them all, the crow,
Renders good service as your man at arms,
Crushing the beetle in his coat of mail,
And crying havoc on the slug and snail.

—*Mrs. Mary Treat, before N. J. State Horticultural Society.*

MILDEW ON GOOSEBERRY.

Powdery mildew of the gooseberry affects most largely the large English varieties. The fruit is discolored as well as the leaves destroyed in some cases ; but in many localities these English gooseberries are grown without any signs of the disease. They are large and superior in quality and can be successfully grown where the mildew does affect them, providing the proper remedy is used, which is the sulphide of potassium in solution. It does no injury, not being poisonous in the small quantity applied. One gallon is applied to ten or twelve bushes, costing one cent per bush. Spray as soon as the leaves unfold ; after this spray after each rain.—*Prof. S. A. Beach.*

CRYSTALLIZING FRUIT.

Though no authority on crystallizing fruit—that is, professionally—there is a simple process for home crystallizing which I know of. The fruit is dried first. For this the finest fruit is selected. It must be very ripe, then thoroughly dried, and after this “sweated.” Then it is dipped in the very heaviest syrup one can make—say that used for candied fruit, which is a gill of water to a pound of sugar. I can give no exact rule for time of dipping—two or three minutes in the hot syrup. Then the fruit is dried again. This process makes a delicious article, and for this reason: The dried fruit, without sugar, retains all the fruity flavor, and the dipping process after the drying does not penetrate the fruit so as to destroy that fine, natural flavor, but merely adds to it the taste of the sugar crystals which are formed on the surface. It is unnecessary to say that the very best granulated sugar should be used. I might add that some confound crystallized fruit with sweetmeats or candied fruit. As I understand the matter the difference between them is this: For the former the fruit is dipped in the syrup after being dried, not cooked in it; while for the latter the fruit is cooked slowly and carefully in the heavy syrup and then dried.—*Good Housekeeping*.

APPETIZING WAYS IN WHICH APPLES MAY BE SERVED.

To make apple float take a tablespoonful of red apple or crab-apple jelly to each white of egg, and whisk until the mixture is quite light and foamy. Pour a plain custard into a deep glass dish and pile the mixture over it. Serve with sponge rusk fingers.

For ginger apples, take some hard, smooth skinned apples and cut them into quarters. To every pound of apples allow a quarter of a pint of water and half a pound of sugar. Boil the water and sugar together until they become a thick syrup, then pour this over the apples, allowing them to stand for twenty-four hours. Then add the same quantity of sugar as used for the syrup, and to every pound of the fruit half an ounce of bruised ginger and a pinch of cayenne pepper tied up in muslin. Let this simmer until the fruit is transparent, and put into jars, covering as tightly as possible. The ginger and muslin should be carefully removed.

For apple snow-balls, boil one-quarter pound of rice in water until perfectly tender. Pare and core a few apples, replace the core by two cloves, brown sugar and a squeeze of lemon juice. Cover each apple with a little rice and tie up separately in a cloth. Boil for half an hour, and serve with a sweet sauce flavored with lemon.

Pare half a dozen good apples for apple compote, scoop out the middle without breaking the fruit. Place in a pie dish with a quarter of a pint of water, half a pound of sugar, and the rind and juice of half a lemon. Cover the dish and cook in a hot oven until the fruit is quite tender.

To prepare pink apple snow, pare, core and boil six large apples to a pulp, and press them through a sieve. Sweeten to taste, and then to every tablespoonful of apple add a teaspoonful of currant jelly. Whisk the whites of six or seven eggs with two heaped tablespoonfuls of sugar, and when frothing add them to the apple mixture, whisking all together until quite light. Pile high on a glass dish and add a currant or strawberry jelly garniture. This dish is one very suitable for children and invalids. For fried apples, slice some apples, dip them in a batter made of one egg, sugar, milk and flour enough to thicken. Fry a golden brown, sprinkle with lemon juice, and serve very hot.

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